

1861

Carangoides dinema Bleeker

Carangoides dinema Bleeker, Nat.
Tyds. Ned. Indie, vol. 1, p. ⁽³⁵⁵⁾365, 1850
(type locality, Batavia); Verh.
Batavia. Genoot. (Nakree), vol.
24, p. 63, 1852 (Batavia).

— Fowler, Proc. Acad. Nat. Sci.
Philadelphia, vol. 86, (1934) p. 447,
fig. 29 (young, hatal).

2 $\frac{4}{5}$; A. III, 13, I, second spine 4 $\frac{3}{4}$,
first ray 2 $\frac{7}{8}$; least depth of
caudal peduncle 2 $\frac{1}{5}$; pectoral 1 $\frac{4}{5}$;
ventral 1 $\frac{1}{2}$; caudal 3 $\frac{1}{3}$ in combined
head and body to caudal base, hind
edge emarginate).

Blue-gray above, below pearl
white. Iris rosy. Silvery streak
from above snout tip along lower eye
edge back toward pectoral axil.
Each row of scales longitudinally
on body with ~~many~~ diffuse golden
streak. Fins violaceous gray or
pale pearly rose. Length 410 mm.
(Bleeker.)

East Indies.

Diagnosis.^m The above name is proposed
for Bleeker's figure and description,
evidently not to be confused with
Pimelopterus waigiensis Quoy and Gaimard.

Caranx dinema Günther, Cat. Fish.
 Brit. Mus., vol. 2, p. 452, 1860
 (copied).

Caranx (Citula) dinema Wakuiya, Ann.
 Carnegie Mus., vol. 15, p. 178, ^{pl. 32, fig. 2} 1924
 (Ryukyu).

Caranx (Carangoides) dinema Weber
 and Beaufort, Fish. Indo-Austral.
 Archip., vol. 4, p. 241, 1931 (Mar).

8767 and 10362. Port Jamelo, Manila Bay, Luzon. July 13, 1908. Length 57 to 106 mm.

22741. Port Maricaban, southern Luzon. July 21, 1908. Length 113 mm.

22249 and 23141. Port Matalvi, western Luzon. November 22, 1908. Length 112 to 117 mm.

14597, 14599, 14600, 15338, 23260, 23261, 23270, 23271. Port Palapay, eastern Luzon. June 3, 1909. Length 99 to 113 mm.

23157 to 23160. Puerta Princesa, eastern Palawan. April 5, 1909. Length 77 to 114 mm.

23570. Romblon reefs. March 26, 1908. Length 59 mm.

~~Caranx carangoides~~ (Bleeker)

Leioglossus carangoides Bleeker,
Nat. Tijds. Ned. Indië, vol. 1,
p. (355) 367, 1850 (type locality,
Batavia, Java; Siboga, Sumatra);
Verh. Batavia. Genoot. (makreel),
vol. 24, p. 70, 1852 (Batavia;
Sibog); Nat. Tijds. Ned. Indië,
vol. 20, p. 237, 1859-60 (Singapore),
p. 449 (Singapore); vol. 21, p. 138,
1860 (Muntok, Banka); Verslag.
Kon. Akad. Wet. Amsterdam, ser. 2,
vol. 2, p. 300, 1868 (Waigiu).

Can²⁹

1546

Johnius goldmanni (Bleeker)

Corvina goldmanni Bleeker, Natuurk.

Tijdschr. Nederl. Indië, vol. 7, 1854,
p. 371. Soengl Kuan, Batjan.

Johnius goldmani Bleeker, Nat. Soc.

Sci. Ind. Néerland., no. 2, vol. 6, 1857, p.
4 (Doreh, New-Guinea).

Johnius goldmanni Fowler, Proc. Acad.

Nat. Sci. Philadelphia, 1927, p. 286
(Philippines); Mem. Bishop Mus., vol. 10,
1928, p. 235 (on Günther).

Sciaena goldmanni Günther, Cat. Fishes

Brit. Mus., vol. 2, 1860, p. 293 (compiled).

Otolithus goldmani Bleeker, Nederl.

Tijdschr. Dierk., vol. 2, 1865, p. 281

(Amboina).

Pseudosciaena goldmani Bleeker, Verhandel.

Kon. Akad. Wetensch. Amsterdam, vol.

14, series 3, 1874, p. 33 (Bali, Batjan,

Amboina, New-Guinea).

→

Eraspis carangoides Bleeker, Ned.
Tijds. Ned. Indië, vol. 8, p. (393)
418, 1855 / Amboina.

Caranx carangoides Fowler, Mem.
Bishop Mus., vol. 10, p. 146, 1928
(compiled).

first ray $2\frac{1}{8}$; caudal $1\frac{2}{3}$, obtusely
cuneate or rounded; least depth of
caudal peduncle $3\frac{2}{3}$; pectoral $1\frac{1}{2}$;
ventral $1\frac{4}{5}$.

Silver gray above, shading through
silver on sides to pearl white on
breast and belly. All upper lateral
scales densely powdered with dusky
dots as 4 broad longitudinal darker
gray bands, $\frac{1}{2}$ above and $\frac{1}{2}$ below lateral
line. Dorsal, caudal and pectoral gray,
spinous dorsal closely dotted to obscure
ground color, becomes darker from base
upward so outer third appears blackish.
Soft dorsal with dots much less crowded,
only narrow marginal and suprabasal
band appearing blackish. Caudal tips

Caranx lioglossus Günther, Cat.
Fish. Brit. Mus., vol. 2, p. 432,
1860 (on Bleeker). — Kner,
Reise Novara, Fische, p. 156, 1865
(Ceylon; Java). — Boulenger,

Proc. Zool. Soc. London, p. 135,
1892 (Muscat). — Elera, Cat.

Fauna Filipinas, vol. 1, p. 509, 1895
(Luzon; Manila Bay).

— Károli, Termesz. Füzetek, Budapest,
vol. 5, p. 160, 1881 (Singapore).

227

15901. Mansalay, Mindoro. June 4, 1908.
Length 99 mm.

23251 to 23253. Mantacao Island,
west coast of Bohol. April 8, 1908.
Length 74 to 111 mm.

23299. Maribojoc Bay, Maribojoc,
Bohol Island. March 26, 1909. Length 70 mm.

4572 and 4573, 16985, 17434. Mambog
Island, Dinabayan Islands.
March 3, 1909. Length 97 to 102 mm.

17683. Murciélagos Bay, Mindanao.
August 9, 1909. Length 117 mm.

26 exemplars. Apol, Mindanao.
August 4, 1909. Length 69 to 116 mm.

22084. Payapan Bay, Luzon. February
20, 1909. Length 98 mm.

Depth $2\frac{1}{8}$ to $2\frac{1}{5}$; head $2\frac{3}{4}$ to $3\frac{1}{8}$, width 2 to $2\frac{1}{8}$. Snout 3 to $3\frac{1}{2}$ in head from snout tip; eye $3\frac{2}{3}$ to $4\frac{2}{5}$, $1\frac{1}{8}$ to $1\frac{1}{2}$ in snout, $1\frac{1}{5}$ to $1\frac{1}{2}$ in interorbital, adipose eyelids narrowly marginal in young; maxillary reaches $\frac{2}{5}$ to $\frac{1}{2}$ in eye, expansion $1\frac{1}{4}$ to $1\frac{1}{2}$, length $2\frac{1}{10}$ to $2\frac{2}{5}$ in head from snout tip; interorbital 3 to $3\frac{3}{4}$, convexly elevated.

Gill rakers 8 + 18 or 19, lanceolate, little longer than gill filaments or $1\frac{2}{5}$ in eye.

Breast and chest naked, extends up sides over half way to pectoral base, which also naked. A straight section of lateral line $1\frac{1}{4}$ to $1\frac{1}{3}$ in arch, scutes 23 to 25.

D. I, VIII — I, I, 17, I to 20, I, third spine $2\frac{1}{2}$ to $2\frac{3}{5}$ in total head length, first simple ray $2\frac{3}{4}$ to 3 in fish without caudal; A. II — I, I, 16, I to I, I, 18, I, first simple ray $1\frac{1}{8}$ to $1\frac{1}{5}$ in total head length; upper caudal lobe 1 to $1\frac{1}{5}$; least depth of caudal peduncle 5 to 7; ventral $1\frac{1}{8}$ to $1\frac{7}{8}$; pectoral $2\frac{2}{3}$ to $4\frac{1}{4}$ in fish without caudal, rays I, 16.

Back brown, sides and below whitish. Opercle with large neutral black, vertical, submarginal blotch, nearly twice eye diameter. Iris gray. Spinous dorsal and ventrals blackish terminally. Other vertical fins dark gray marginally, caudal lobes

1868

of small ^{examples} ~~extreme~~ tipped with
white, sub-terminally dark
gray. Most specimens with
dark neutral gray blotch on
edge of back, behind and
below each fin ray base.

Batal, East Indies, Philippines,
Rin Rin.

Two examples. Iato, Luzon.
 June 19, 1908. Length 78 to 74 mm.
 Depth $2\frac{1}{8}$. Lower gill rakers 17.
 Breast naked to pectoral.
 A. II - I, 16.

5951. Panabutan Bay,
 Mindanao. February 6, 1908.
 Length 123 mm. Depth 2. Lower
 gill rakers 17. Breast half
 naked to ~~vent~~ pectoral. A.
II - I, 17. Ventral blackish
terminally.

Kawatana, Nagasaki).

Sciaena (Pseudosciaena) schlegelii

Steindachner, Ann. Mus. Wien, vol.
11, 1876, p. 208 (Japan).

Corvula schlegelii Jordan and Snyder,

Annotat. Zool. Japon., vol. 3, 1901, p. 81

(Yokohama; Nagasaki); Proc. U. S. Nat.

Mus., vol. 23, 1901, p. 356 (Tokyo). $\frac{1}{2}$ Franz,

Abhandl. Kon. Bayer. Akad. Wiss.,

math.-physik. Klasse, vol. 4, Suppl. Band

1, 1910, p. 45, pl. 6, fig. 50 (Yokohama;
Nagasaki).

Sciaena schlegelii Snyder, Proc. U. S. Nat.

Mus., vol. 42, 1912, p. 416 (Kagoshima). $\frac{1}{2}$

Jordan and Metz, Mem. Carnegie Mus.,

vol. 6, no. 1, 1913, p. 37 (Fusan, Korea). $\frac{1}{2}$

Jordan and Thompson, Mem. Carnegie Mus.,

1870

A. N. S. P., six examples. Natal,
South Africa. 1932. H. W. Bell Marley.
Length 80 to 209 mm.

134789

109

8019, 15923 [1165]. Port Panalacan, Marinduque. February 23, 1909. Length, 212 to 218 mm. [1165.] Sides anteriorly diffused with dusky in life, after death fading silvery gray. Four or 5 broad copper red bands in life, fade to pale red after death. Head dusky olive; blood red at preopercle margin, tip of opercle and streak crossing eye above and below; inside mouth red. Vertical fins vermilion; both dorsal and anal clear anteriorly, latter with more or less orange terminally. Pectoral rays orange, membranes clear. Ventral rays white, with very yellowish tinge, membranes clear.

8639, 10734, 10735, 10737 to 10739. Port Ciego, Balabac. January 3, 1909.

Length, 140 to 223 mm.

6344, 6349, 6397, 16612. Port Jamelo. July 13, 1908. Length, 145 to 230 mm.

5 examples.

6143. Puerto Princesa, Palawan. April 5, 1909. Length, 198 mm.

11177. Rasa Island, Montaguin Bay, Palawan. April 11, 1909. Length, 203 mm.

9367. Romblon Harbor. March 25, 1908. Length, 160 mm.

18624 [1283]. Saboon Island, Bagay Gulf, Luzon. March 10, 1909. Length, 128 mm.

Olive and silvery gray, white below. Side with 5 obscure saddle-like transverse bars, somewhat more distinct after fish faded. No lateral dark blotch or red longitudinal bands. Vertical fins more or less vermilion towards ends. Caudal yellowish basally. Pectoral very pale clear pink, dusky in axil. Ventral pale, with slight purplish shade.

9135, 9136. San Roque, Leyte. July 29, 1909. Length, 235 or 236 mm.

A554. Sulado Island. September 17, 1909. Length, 220 mm.

7338. Tara Island. December 14, 1908. Length, 280 mm. Upper surfaces dark

olive, below white. Scales above with dusky centers, those along middle of side with blackish centers. Side of head with orange bronze shades, but without stripes or bars; opercular and preopercular margins bronzy; upper lip pinkish; inside mouth scarlet, but not to gill opening. Dorsal membranes clear vermilion, ends bright. Anal like dorsal, bright vermilion at base. Caudal with brassy overshades extending to middle of side, edges vermilion. Pectoral rays orange, membranes clear. Ventrals pinkish.

Carangoides oblongus (Cuvier)

Caranx oblongus Cuvier, Hist. Nat. Poiss., vol. 9, p. 128, 1833 (type locality, Vanicolo; Oualan). —

Bleeker, Nat. Geneesk. Arch. Ned.

Indie, ser. 3, vol. 2, p. 517, 1845

(Batavia). — Cantor, Journ. Asiatic

Soc. Bengal, vol. 18, pt. 2, p. 1114, 1849 (1850)

(Pinang Sea). — Günther, Cat. Fish. Brit.

Mus., vol. 2, p. 452, 1860 (Malay Peninsula).

— Day, Proc. Zool. Soc. London, p. 689, 1870 (Andamans);

Fishes of India, pt. 2, p. 222, pl. 51, fig. 1, 1876.

Peters, Monatsb. Akad. Wiss.

Martens, Preuss. Exped. Ost. Ind., vol. 1, p. 391, 1876 (Singapore).

Berlin, p. 836, 1876 (1877) (New

Britain; Bougainville Island;

— Day, Fauna British India, vol. 2, p. 163, 1889.

Solomon). — Jordan and Seale, Bull. Bur. Fisher.

vol. 25, p. 235, 1905 (1906) (Padang specimens of Fowler).

— Beau and Weed, Proc. U. S. Nat. Mus., vol. 42, p.

600, 1912 (Batavia). — McCulloch, Rec. Austral.

Mus., vol. 15, no. 1, p. 31, April 15, 1926 (types of Caranx auriga Cuvier).

— Fowler, Journ. Bombay Nat. Hist. Soc.,

vol. 30, no. 2, p. 318, January 25, 1925

(Tuticorin). — Fowler, Proc. Acad. Nat. Sci.

Philadelphia, vol. 79, 1927, p. 272

(Philippines).

56049 U.S.N.M. Jolo, Philippines.
Bureau of Fisheries (3417). Length
160 mm.

56061 U.S.N.M. Buluan, Philippines.
Bureau of Fisheries (3890). Length
45 to 53 mm. Two examples.

57975 U.S.N.M. Zamboanga.
Dr. E.A. Mearns. Length 56 to 58 mm.
Three examples.

84248 U.S.N.M. Zamboanga, Dr.
Fred Baker. Length 133 to 138 mm.
Three examples.

~~U.S.N.M. Fiji. Wilkes Exploring
Expedition. Length 113 mm.~~

9212 A.N.S.P. Namo, Dr. H.C. Caldwell.
Length 130 mm. Depth $2\frac{1}{2}$. Scales 35 in lateral
line to caudal base and 4 more on latter; 5
above, 9 below. D. IX, 10, I, A. III, 7, I. Pectoral dusky
terminally.

33308 A.N.S.P. Jolo. Bureau of Fisheries.
Length 170 mm.

— McCulloch, Austral. Mus. Mem.,
no. 5, pt. 1, p. 189, Sep. 10, 1929 (reference).

324

4684. Galoney Island, Ragay Gulf,
Luzon. March 9, 1909. Length 97 mm.

12696. Gonda Island, between Jolo
and Tawi Tawi. September 20, 1909.

Length 103 mm.
^{11908 and 12244.} Limpinigan Island, south of Gumbanga.
September 11, 1909. Length 99 to 100 mm.

23914, 23925 to 23929. Limboner Cove,
Manila Bay, Luzon. February 8, 1909.
Length 82 to 99 mm. [1117.] Generally
reddish brown or pearly. Dusky band
from snout tip to caudal. Spinous
dorsal with an oblique bar through
middle of first membrane and
tip of second; tip of first pearly and
pearly bar underneath black,
remainder of fin dusky olive, spines
pale. Second dorsal rays pale pink,

Caranx (Citula) oblongus Wakuiya,
Ann. Carnegie Mus., vol. 15, p. 175, pl.
22, fig. 2, 1924 (Ryukyu; ^{as} Formosa).

Caranx (Carangoides) oblongus Weber
and Beaufort, Fishes Indo-Austral.
Archip., vol. 6, p. 235, fig. 46, 1931
(Ann).

15563. Bugsuk Island, Balabac.
January 5, 1909. Length 95 mm.

14253 and 14254. Cundaraman
Island, Balabac. January 4, 1909.
Length 74 to 88 mm.

15507 and 23642. Caracaran, Batan
Island. January 8, 1909. Length 90 to 94 mm.

16854. Cataingan Bay, Masbate
Island. April 18, 1908. Length 95 to 98
mm. [555]. Pearl gray, with reddish
tints more pronounced on lower
surface. Lower head, breast and belly
thickly punctulated with small
brownish specks, smallest on head.
Dark brown stripe from premaxillary
through eye to caudal base and
small brown blotch above its
posterior end. Iris with yellow.
Dorsal body color. Brown bar across
front of first dorsal, including

Carangoides oblongus Bleeker, Verh.
Batavia. Genoot. (Makreel.), vol.
24, p. 62, 1852 (Batavia; Padang);
Verslag. Kon. Akad. Wet. Amsterdam,
vol. 12, p. 31, 1861 (Singapore).

— Fowler, Journ. Acad. Nat. Sci.
Philadelphia, ser. 2, vol. 12, p. 513,
June 10, 1904 (Padang); Proc. Acad.
Nat. Sci. Philadelphia, p. 83, Jan.
1905 (Padang material).

— Fowler, Copeia, no. 58, p. 63, June 8,
1918 (Philippines); Journ. Bombay
Nat. Hist., vol. , no. , p.
258, October 20, 1927 (Bombay);
Mem. Bishop Mus., vol. 10, p. 151,
1928 (compiled); vol. 11, no. 5, p. 326,
1931 (reference); Proc. Acad. Nat. Sci.
Philadelphia, vol. 86, p. 446, fig. 27
(young), 1934 (Durban, Natal).

Citula oblonga Ogilby, Mem.
Queensland Mus., vol. 3, p. 134, Jan.
28, 1915 (type of Caranx auriga).
— Whitley, Rec. Austral. Mus.,
vol. 18, no. 3, p. 108, March 25, 1931
(reference).

and as it narrows posteriorly only
dark line at caudal base. Close
above tubes of lateral line on caudal
base, small round dark spot, less
than pupil in size. Fins grayish
to pale brownish. Spinous dorsal
little more brownish or dusky
terminally. Soft dorsal and anal
each with subbasal deep brown
longitudinal line, also upper and
lower caudal edges each with dark
brown line. Sometimes the dark
axil longitudinal band is absent
from the trunk and tail in
preserved examples.

Philippines, Polynesia.

1877

Caranx auriga de Vis, Proc. Linn.
Soc. New South Wales, vol. 9, pt. 3,
p. 539, Nov. 29, 1884 (type locality,
Cairns, Queensland).

Caranx aurifer Saville & Kent, Great
Barrier Reef, p. 369, 1893 (Queensland)
(error).

Caranx filigera Kent, Prelim. Rept.
Food - Fish. Queensland, p. 10, 1889
(type locality, ^{Queensland} Brisbane; Great
Barrier Reef, p. 369, 1893).

exposed though short and each with short basal scale. Scales with 10 to 14 basal radiating striae; 56 to 119 apical denticles, with 1 to 4 transverse series of basal elements; ~~an~~ circuli fine.

D. VII - I, 9, I, third spine 2 to $2\frac{1}{8}$ in head, second ray $1\frac{1}{2}$ to $1\frac{3}{4}$; A. II, 8, I, second spine 3 to $3\frac{1}{4}$, third ray $1\frac{7}{8}$ to $2\frac{1}{8}$; caudal $1\frac{1}{3}$ to $1\frac{2}{5}$, emarginate; least depth of caudal peduncle $2\frac{2}{5}$ to $2\frac{1}{2}$; pectoral $1\frac{2}{5}$ to $1\frac{2}{3}$; ventral $1\frac{3}{4}$ to $1\frac{4}{5}$.

Brown, paler to quite light below. Silvery and brassy tints on sides of abdomen. Blackish brown line from snout tip to eye, then broadly through latter and over postocular along median axis of body to caudal base.

59683 U.S.N.M. Hamashima, Japan.
Dr. H. M. Smith. Length 60 to 80 mm.
2 examples. Quite dark and intervening
pale areas with small, scattered, ill
defined whitish spots or dots.

59684 U.S.N.M. Hamashima. Dr. H.
M. Smith. Length 55 mm?

59685 U.S.N.M. Matsushima. Dr. H.
M. Smith. Length 162 mm.

29609 and 29610 A.N.S.P. Wakanoura.
Jordan and Snyder.

Citula gracilis Ogilby, Mem.
Queensland Mus., vol. 3, p. 75, pl.
23, Jan. 28, 1915 (type locality,
Darnley Island, Queensland).

Caranx humerosus McCulloch,
~~Austral~~ Biol. Res. Endeavour, vol. 3,
pt. 3, p. 137, pl. 25 (type locality, Eleven
to fourteen miles N. 59° W. of Pine Point, Queensland,
24 to 26 fathoms; Bustard Bay, 11 to 21 fathoms; near Bowen).

→ Caranx (Citula) tanakai Wakuiya,
Ann. Carnegie Mus., vol. 15, p. 177,
pl. 23, fig. 1, 1924 (Type locality,
Kii; Ryukyu).

Austral. Mus. Mem., no. 5, pt. 2, p. 189,
Sep. 10, 1929 (reference).

tips of posterior ones black, with
dashes of black on last 5 or 6
membranes and more or less
pronounced dusky bar near base of
fin. Caudal and anal pink, black
bar at base of latter, tips narrowly
dusky in both. Pectorals clear
pink. Ventrals pink, first membranes
pearly, second dusky.

5134. Little Santa Cruz Island,
Zamboanga. May 28, 1908. Length 63 mm.

8888 and 8890. Mabal Island, east
of Zamboanga. September 9, 1909. Length
64 to 97 mm.

16000 and 16001. Mactan Cove, Mactan
Island, off northern Cebu. April 6, 1908.

Depth 2 to $2\frac{2}{5}$; head $2\frac{3}{5}$ to $3\frac{1}{3}$, width 2 to $2\frac{3}{4}$. Snout $2\frac{7}{8}$ to 3 in head from snout tip; eye $3\frac{1}{8}$ to $3\frac{7}{8}$, $1\frac{1}{3}$ to $1\frac{2}{5}$ in snout, $1\frac{1}{5}$ to $1\frac{1}{4}$ in interorbital, adipose lids narrow in young; maxillary reaches to or $\frac{1}{3}$ in eye, expansion $1\frac{2}{5}$ to 2, length $2\frac{1}{6}$ to 3 in head from snout tip; interorbital $3\frac{1}{5}$ to 4, convexly elevated. Gill rakers 7 to 9 + 10 to 19, lanceolate, equal gill filaments or $\frac{1}{2}$ of eye.

Scales $57 + 3\frac{7}{8}$ ^{to 40} last 7 on caudal base, in lateral line, arch 1 to $1\frac{1}{8}$ in straight section. Breast and chest naked, extends on sides $\frac{3}{5}$ to pectoral base.

D. VIII — I, I, 20, I to I, I, 22, I, third erect spine $2\frac{2}{3}$ to $2\frac{4}{5}$ in total head

head length, first branched ray 1 to $1\frac{5}{6}$; A. II - I, I, 17, I to I, I, 19, I, first branched ray 1 to 2; upper caudal lobe $1\frac{1}{10}$ to $1\frac{1}{5}$; least depth of caudal peduncle 5 to $5\frac{1}{2}$; pectoral $1\frac{1}{8}$ to $1\frac{1}{5}$, rays I, 20, not reaching beginning of straight section of lateral line; ventral $1\frac{3}{4}$ to $1\frac{7}{8}$.

Back brown, sides and below pale to whitish with silvery reflections. Throat opercle dark brown above no distinct dark marginal blotch. Iris gray. Fins pale brownish, spinous dorsal, ends of ventrals and caudal lobes dark or dusky. Both soft dorsal and anal marginally dark brown. Smallest examples with 8 broad dark

vertical bands, greatly wider than interspaces.

India, Andamans, Malaya, East Indies, Philippines, Riu Kiu, Formosa, Queensland, Melanesia, Micronesia.

Caranx humerosus McCulloch was based on an example 148 mm long, and described with the maxillary reaching $\frac{1}{2}$ in eye or beyond and scales 27 to 31.

Two examples. Atulayan Bay, ¹⁸⁸³
Luzon. June 17, 1909. Length 113 to
170 mm. Lower gill rakers 18.
A. II - I, 17. Both with ventrals dusky
terminally.

One example. Buluan Island.
September 13, 1909. Length 25 mm.
A. II - I, 17.

7737. Jolo market. February 12,
1908. Length 95 mm. Depth $2\frac{1}{5}$.
Lower gill rakers 17. A. II - I, 16.

21172. Malcochin Harbor,
Linacapan Island. December 1908.
Length 150 mm. Depth $2\frac{1}{5}$. Lower
gill rakers 20.

Two examples. Mansalay, Mindoro.
January 4, 1908. Length 147 to 173 mm.
Lower gill rakers 17. A. II - I, 16.

One example. Murcielago Bay,
Mindanao. August 21, 1909.
Length 29 mm. Depth $2\frac{1}{5}$. A. II - I, 16.
Dorsal and anal without lobes.

13785. Mati, Pujada Bay, Mindanao.
May 15, 1908. Length 144 mm. Depth $2\frac{1}{5}$.

maxillary reaches $\frac{1}{2}$ in eye, expansion $1\frac{1}{8}$ to $1\frac{1}{5}$ in eye, length $2\frac{1}{3}$ to $2\frac{1}{2}$ in head; mouth terminally inferior, with 6 pores at chin; narrow bands of villiform teeth in jaws, outer upper row slightly enlarged though hardly caninelike, lower with slightly enlarged single row of teeth posteriorly; interorbital $3\frac{2}{3}$ to $3\frac{3}{4}$, broadly convex; 4 or 5 distinct denticles along preopercle edge around angle; preorbital depth from eye to maxillary $1\frac{1}{2}$ to $1\frac{3}{4}$ in eye. Gill rakers 8 or 9 + 16 or 17, lanceolate, $1\frac{1}{3}$ in gill filaments, which equals eye.

Scales 47 to 50 in lateral line to caudal base and 15 to 17 over caudal; 8 above, 11 below, 23 or 24 predorsal to

7038. Port San Pio Quinto,
Cuniguin Island. November 10, 1908.
Length 203 mm. Depth $2\frac{1}{2}$. Lower
gill rakers 18. Like Wakiya's figure
of Caranx (Citula) hemizygnostethus.
except no black spot on opercle and
dorsal and anal filaments longer.

7192, 7194. Port San Vicente.
November 18, 1908. Length 260 mm.

9313. Ste. Maria Bay, Siquijor
Bay, Siquijor Island. August 11, 1909.
Length 416 mm.

17198. Verde del Sur Island, Palawan.
April 6, 1909. Length 154 mm. Depth $2\frac{1}{2}$.

A719, A731. Danawan Island, Borneo.
September 27, 1909. Length 375 to 380 mm.

given by Sauvage is surely identical
with my materials.

17432 and 17433 [1934]. Balan
Island, Linales Group. September 13,
(1934.)
1909. Length 138 to 174 mm. Sulphur

yellow, with slight cadmium shade
on back and top of head, lower
portions paler. Through eye 3 or 4
narrow purplish stripes extend
on cheeks, one immediately below eye
reaches preorbital edge and others
shorter. Fins colored like body.

8141: Dasol Bay. May 9, 1909.
Length 153 mm.

A417, A418, 5183, 5191, 5192. Jolo
market. March 7, 1908. Length 253 to
316 mm. (A417.) Rosy, sides washed
with yellow, showing most distinctly

A. n. S. P., two examples.
Padang, Sumatra. A. C. Harrison
and H. L. Hiller. 1904.

A. n. S. P., one example. Tuticorin,
India. 19. Madras Fisher.
Dep. Length 93 mm.

A. n. S. P., two examples.
Philippines. 1923. Rev. Joseph
Clemens. Purchased. Length 94
to 150 mm.

A. n. S. P., four examples.
Bombay, India. 1925. Dr. F.
Hallberg. Length 38 to 55 mm.

A. n. S. P., three examples. Durban,
Natal. 1932. H. W. Bell-Marley.
Length 135 to 168 mm.

NOT A TYPE
OF THE SPECIES
OF THE GENUS
OF THE ORDER

~~134780~~ ~~108~~
22814 [429], 22815. Jolo. March 6-7, 1908. Length, 110 to 133 mm. [429.]

In formalin general color olive-green, crossed by pale bar posteriorly in life. Dorsals and anals washed with vermilion. Caudal orange-vermilion.

8767. Lahay Island. June 11, 1909. Length, 203 mm. Back pale dusky, breast band from and lower portions of sides nearly white. Broad lateral reddish brown/pectoral base to caudal base. When fresh sides with numerous irregular vertical bars, later in fading each scale shows pearl-gray center most marked above lateral line. Fins clear, with very pale vermilion wash.

11358 to 11361, 19207, 22044. Maagnas, Lagonoy Gulf, Luzon. June 17, 1909. Length, 130 to 195 mm.

8819. Maculabo Island. June 13, 1909. Length, 318 mm.

8829, 8830. Maculabo Island. June 14, 1909. Length, 257 to 287 mm.

9201. Mahinog, Camiguin Island. August 3, 1909. Length, 226 mm.

8829, 12528. Malcochin Harbor, Linapacan Island. December 19, 1908. Length, 183 to 203 mm.

7610. Mansalay, Mindoro. June 4, 1908. Length, 195 mm.

15965. Masbate Reef. April 20, 1908. Length, 190 mm.

11209. Matnog Bay. May 31, 1909. Length, 218 mm.

6231. Medio Island, Galera Bay, Mindoro. June 9, 1908. Length, 287 mm.

8229. Murcielagos Bay, Mindanao. August 20, 1909. Length, 195 mm.

4680, 13993. Nasugbu, Luzon. January 16, 1908. Length, 158 to 180 mm.

6531. Off Daet. June 18, 1909. Length, 175 mm.

15166. Pagapas Bay. February 20, 1909. Length, 198 mm.

1 example. Philippines. Length, 233 mm.

5893. Polloc, Mindanao. May 22, 1908. Length, 227 mm.

Carangoides aurochs (Ogilby)

Catula aurochs Ogilby, Mem.

Queensland Mus., vol. 3, p. 79, pl. 25, 1915 (type locality, Edgcombe Bay; off Pine Peak).

Caranx aurochs McCulloch, Biol.

Res. Endeavour, vol. 3, pt. 3, p. 136, pl. April 21, 1915 (11 to 14 miles N.W. of Pine Creek, Queensland, 24 to 26 fathoms; 12 miles N.E. of Bowen, Queensland, 19 to 25 fathoms); Austral. Mus. Mem., no. 5, pt. 2, p. 186, Sep. 10, 1929 (reference).

24098 to 24100. Batan Island.

June 5, 1909. Length 25 to 68 mm.

4 examples.

24104 and 24105. Batan Island.

July 22, 1909. Length 42 to 45 mm.

24104. Cebu market. August 28, 1909.
Length 72 mm.

5 examples. Subat Bay, Luzon.

June 23, 1909. Length 36 to 78 mm.

1 example. Pilas Island, south of
Zamboanga. September 12, 1909. Length
34 mm.

1 example. Sablayan, Mindoro Island.
December 13, 1908. Length 47 mm.

23774. San Pascual, Burias Island.
March 8, 1909. Length 24 to 68 mm.
2 examples.

7 examples. Simaluc Sibi Sibi Island,
north of Tawi Tawi. September 23, 1909.
Length 22 to 39 mm.

Depth $1\frac{5}{6}$; head $3\frac{1}{3}$. Snout $3\frac{2}{3}$ in head from snout tip; eye $3\frac{1}{2}$, subequal with snout, $1\frac{1}{5}$ in interorbital; maxillary reaches $\frac{1}{3}$ in eye, expansion 2 in eye, length $2\frac{1}{3}$ in head from snout tip; interorbital slopes up steeply and high posteriorly. Gill rakers 15 or 16 + 38 to 41, rather longer than gill fringes or 5 to $5\frac{1}{5}$ in head.

Breast naked to pectorals and behind ventral bases. Arch of lateral line $1\frac{1}{2}$ in straight section, which latter with 38 to 40 rather weak spinose scutes.

D. I, VII, I, 21 or 22, first ray reaches beyond end of caudal or $1\frac{1}{4}$ in fish without caudal, third erect spine $2\frac{3}{4}$ in total head; A. II - I, 17 or 18, first

branched ray $1\frac{1}{8}$; caudal $1\frac{1}{10}$,
deeply forked; least depth of
caudal peduncle $5\frac{1}{7}$; ventral
 $1\frac{9}{10}$, rays I, 5; pectoral 20, fin
 $2\frac{2}{3}$ in fish without caudal.

Back and upper sides dark
blue, with a broad faint cross
bands, which disappear with age,
shading down lower sides to
silver of under surfaces. Preopercu-
lar ridge black. Diffuse brown
spot behind eye. Snout, edge of
mandible and chin violet. Dorsal
filament and inner rays of
ventrals black, outer ray and
tip white. Length 167 mm.
(Ogilby.)

Queensland.

Citula aurochis Ogilby was
based on specimens 15.7 to 16.7 mm
long, with the depth $1\frac{4}{5}$ to $1\frac{9}{10}$,
and gill rakers 38 to 41 below.

Carangoides radiatus (Macleay) ¹⁸⁸⁷

Caranx radiatus Macleay, Proc.
Linn. Soc. New South Wales, vol. 5,
pt. 4, p. 537, May 20, 1881 (type
locality, Rockingham Bay,
Queensland), ~~not in Austral.~~

Mus. Mem., no. 5, pt. 2, p. 189,

Sep. 10, 1929 (reference).

— Saville Kent, Great Barrier Reef,
p. 289, pl. 16, fig. 1, 1893; Naturalist
in Australia, p. 169, 1897. — McCulloch,
Biol. Res. Endeavour, vol. 3, pt. 3, p.
132, pl. 23, April 21, 1915 (type; Port
Hedland, north-western Australia);

Caranx compressus (not day)
Macleay, Proc. Linn. Soc. New South
Wales, vol. 8, pt. 2, p. 204, July 17,
1883 (Lower Burdekin River); vol.
9, pt. 1, p. 24, 1884 (reference).

23679 to 23681, 23472 to 23474.

Sapientana Island, south of
Zambounga. September 13, 1909. Length 68
to 80 mm.

23239. Tataan Island, Himalue Island,
Tawi Tawi Group. February 20, 1908.
Length 98 mm.

23906. Tataan Island. February 21,
1908. Length 80 mm.

18781 and 18782. Tictanan Island,
east of Zambounga. September 8, 1909.
Length 72 to 95 mm.

10378. Tilig, Lubang Island, vicinity
southern Luzon. July 15, 1908. Length
89 mm.

1890

Depth $2\frac{3}{4}$; head $3\frac{2}{3}$, Snout $3\frac{2}{3}$
in head from snout tip; eye $3\frac{7}{8}$,
1 in snout, hind adipose lids
broadly over eye; maxillary reaches
 $\frac{1}{3}$ in eye, expansion $1\frac{4}{5}$ in eye,
length $2\frac{2}{3}$ in head from snout
tip; single series of short
cardiform teeth in each jaw; band
of villiform behind on each
premaxillary, those near symphysis
somewhat enlarged; microscopic
granular teeth on vomer, palatines
and tongue; interorbital moderately
high.

Scales moderately large, adherent,
cycloid, cover breast (except minute
bare patch on lower surface).
Arch of lateral line $1\frac{3}{4}$ in straight
section, which with 38 to 45 scales,
deepest little before end of
dorsal or width little over half
of eye.

$\overline{D. VII, I, 22}$, third spine 2 in total head length, fifth ray $2 \frac{3}{4}$ in fish without caudal; $\overline{A. II - I, 19}$ or 20, fifth ray $3 \frac{1}{5}$; pectoral $2 \frac{4}{5}$, rays 20; caudal deeply lunate, lobes pointed, fin $2 \frac{1}{8}$ in total head; ventral $1 \frac{2}{5}$, rays $\overline{I, 5}$.

Olive green above, silvery below, with or without 6 or more dark vertical bands extending from back to middle of sides. Large black opercular blotch. Tips of front dorsal rays blackish. End of upper caudal lobe black. Length 203 mm to end of median caudal rays. (Mc Culloch)

Western Australia, Queensland, Northern Territory. A strongly marked species with high basal scaly sheaths to soft dorsal and anal and ends of these rays for greater part free, at least anteriorly.

Genus Blepharis Cuvier

1892

Blepharis Cuvier, Règne Animal,
vol. 2, p. 322, 1817. Type Zeus
ciliaris Linnaeus, monotypic.

Blepharichthys Gill, Proc. Acad.
Nat. Sci. Philadelphia, 1862, pp.
431, 436. (Type Zeus crinitus
Mitchell, monotypic.)

907
59684 U.S.N.M. Hamashima.
A.H.M. Smith. Length 66 mm.

71428 U.S.N.M. Hakodate market,
Albatross Collection 1906. Length 57 to 82 mm.
3 examples. Smallest with last dark
transverse band at caudal base incomplete
medially.

71680 U.S.N.M. Kaga, Okinawa, Riu Kiu.
Albatross Collection. Length 112 mm.

76257 U.S.N.M. Japan. 1878.
Prof. E. S. Morse. Length 51 to 76 mm. 3 examples.

Body orbicular, deeply rhomboid, strongly compressed. Head moderate. Snout short, wider in young. Eye advanced in head, large, larger in young. Mouth inclined, lower jaw slightly projecting. Teeth in villiform bands in jaws, on vomer, palatines and tongue. Gill rakers lanceolate. Scales minute, imbedded, sometimes apparently naked. Bony spinous scutes in straight section of lateral line, on side of tail little enlarged. First dorsal little developed, with small, short spines, rudimentary or vanishing with age. Soft dorsal and anal similar, in young first 3 to 5 rays

1894

greatly elongated filaments,
shorter with age. No finlets.
Caudal well forked. Pectoral
falcate. Ventral elongate in
young, shorter with age.

Small brilliant silvery
fishes, widely distributed in
tropical seas. The orbicular
young have very long filaments
from the front of the soft
dorsal and anal fins. Species
two.

1895

Blepharis ciliaris (Bloch)

Zeus ciliaris Bloch, Naturges.

Ousland. Fische, pt. 6, p. 29, pl.
191, 1788 (type locality, East Indies²;
Surate). — Bonnaterre, Tabl. Ichth.,
p. 71, pl. 89, fig. 372, 1788 (copied). —

Gmelin, Syst. Nat. Linnaeus, pt. 1, p.
1223, 1789 (India). — Walbaum,

Artedi Pisc., vol. 3, p. 399, 1792

(copied). — Forster, Fauna Indica,

p. , 1795. — Lacépède, Hist. Nat.

Poiss., vol. 4, pp. 570, 573, 1802 (copied).

— Schneider, Syst. Ichth. Bloch,

p. 94, 1801 (East Indies).

6305, 11632, 12446. Bugsula Island,
Balabac. January 5, 1909. Length 157 to
202 mm.

8830. Malcochin Harbor, Linapacan
Island. December 17, 1908. Length 240 mm.

12568, 12569, 15675. Near Palay Bay,
Luzon. June 16, 1909. Length 204 to 220 mm.

14962. Port Ciego, Balabac. January 3,
1909. Length 164 mm.

52467 U.S.N.M., Apia, Samoa.
Burr^{sen} of Fisheries. Length 321 to 326 mm.
As Kyphosus waigiensis.

1 example. A.N.S.P. Shetland Island.
Bishop Museum. Length 163 mm.

1896

Caranx ciliaris Günther, Cat. Fish.
Brit. Mus., vol. 2, p. 454, 1860
(Amboyna; India). — Day, Fishes
of Malabar, p. 90, 1865. — Playfair,
Fishes of Zanzibar, p. 62, 1866
(Cape Gardafui; Zanzibar).

— Klunzinger, Verh. zool. bot. Gesell.
Wien, vol. 21, p. 454, 1871 (Red Sea). —
Martens, Preuss. Exped. Ost Asien, vol. 1,
p. 391, 1876 (Amboyna).

— Day, Fishes of India, pt. 2, p. 224,
1876. — Macleay, Proc. Linn. Soc. New South
Wales, vol. 5, ~~no~~ p. 537, 1881 (Port
Jackson; North Coast Australia).
— Day, Fauna British India, Fishes,
vol. 4, p. 166, 1889.

caudal peduncle 2 to 2 ¹/₄; pectoral 1 ²/₅ to 1 ¹/₂; ventral 1 ¹/₃ to 1 ³/₅; caudal 2 ⁴/₅ to 3 ²/₅ in combined head and body to caudal base, deeply emarginate.

Back and head above olive to dusky brown, sides below lighter and under surface whitish. Gray white streak from preorbital close along and below eye. Iris pale brownish. Fins more or less dusky, paired ones little paler.

Red Sea, Arabia, Zanzibar, Madagascar, Réunion, India, East Indies, Philippines, Japan, Queensland, Melanesia, Polynesia, Easter Island. Easily distinguished by the soft dorsal higher than the spinous dorsal.

— Gilchrist and Thompson, Ann.
South African Mus., vol. 6, pt. 3, p.
240, 1909 (Natal); Ann. Durban
Mus., vol. 1, pt. 4, p. 384, May 21, 1917
(reference).

12786, 14864, 23395. Dolepo and
Pasejogo Islands, Gulf of Tomini,
Celebes. November 16, 1909. Length 85 to
98 mm.

23116 to 23118. Labuanlata Bay, Gulf
of Boni, Celebes. December 18, 1909.
Length 60 to 88 mm.

12786, 20040, 23457, 23458, 23971, 23973.
Limbe Strait, Celebes. November 10, 1909.
Length 57 to 76 mm.

23550 and
23940. Talisse Island, north of Celebes.
November 9, 1909. Length 84^{to 89} mm.

23499 to 23501. Una Una Road, Binang
Unang Island, Celebes. November 17, 1909.
Length 47 to 100 mm.

1898

Gallichthys ciliaris Lütken, Kon. Danske
Vidensk. Selsk. Skrift. Kjöbenhavn,
vol. 12, no. 6, p. 539, 1880 (development).

Scyris ciliaris Klunzinger, Fische:
Roth. Meer., vol. 1, p. 106, 1884. — Beaufort,
Bijdr. Dierkunde Amsterdam, p. 133,
1913 (Ambo).

287

and 23414.
23306, ¹One Road, Gillolo Island.

December 1, 1909. Length ^{to 105} 75 mm.

^{23350.}
23151 and 23152, ¹Makyan Island.

November 29, 1909. Length 75 to 104 mm.

23631 to 23633. Powati anchorage,
Makyan Island. March 28, 1909. Length
97 to 104 mm. (23632 with riped crustacean.)

12478. Powati anchorage. November 25,
1909. Length 117 mm.

24006 and 24007, 13836, 23113, 23114, 23287
to 23289. Powati anchorage. November 28,
1909. Length 92 to 109 mm.

23312. Gomonno Island, Pitt Passage.
December 3, 1909. Length 88 mm.

^{and 23486.}
23485, ¹Kayon Island. November 24, 1909.
^{87 to}
Length 76 mm.

Savage, Hist. Madagascar, Vois., p. 512, 1891 (reference). 1891

Blepharus ciliaris, Fowler, Proc.
Acad. Nat. Sci. Philadelphia,
vol. 77, 1925, p. 218 (Natal); Bull.
Bishop Mus., no. 22, p. 8, 1925
(Guam); ~~Memo.~~ Mem. Bishop
Mus., vol. 10, p. 151, 1928 (Honolulu;
Tutuila, Samoa; Hawaiian Islands;
Oahu; Maui; Society Islands;
Ebon Island); Proc. Acad. Nat. Sci.
Philadelphia, vol. 81, 1929,
p. 606 (Hong Kong); Mem. Bishop
Mus., vol. 11, no. 5, p. 326, 1931
(Honolulu); Proc. Acad. Nat. Sci.
Philadelphia, vol. 86, p. 450, fig.
31 (adult), 1934 (Durban, Natal).

900
Cuv⁷⁹ Oplegnathus insignis (Kner)

Scarostoma insigne Kner, Sitz. Ber.

Abad. Wiss. Wien, Math.-naturwiss.

Klasse, vol. 56, 1867, p. 715. West coast of

South America. $\frac{1}{n}$ Schmeltz, Cat. Mus.

Godeffroy, no. 4, 1869, p. 15 (Chili).

Oplegnathus insignis J. F. Abbott, Proc.
Acad. Nat. Sci. Philadelphia, 1899, p. 359
(compiled).

Oplegnathus insigne Snodgrass and
Heller, Proc. Washington Acad. Sci., vol. 6,
1905, p. 397 (Tagus Cove, Albemarle, Duncan
and Iguana Coves, Galapagos).

Oplegnathus insignis Evermann and Radcliffe,
Bull. U. S. Nat. Mus., no. 95, 1917, p. 109.
(Paita and Lobos de Tifulra, Peru).

Oplegnathus fasciatus (not Schlegel) Kröyer,
Naturhist. Tidsskr. Kjöbenhavn, series 2,
vol. 1, 1844-45, p. 113 (Callao, Peru).

Allectes ciliaris Jordan and Snyder,
Annot. Zool. Japon., vol. 3, p. 68,
1901 (reference). — Jenkins, Bull.
U. S. Fish Comm., vol. 22, p. 447, 1902
(1903) (Honolulu). — Snyder, Bull.
U. S. Fish Comm., vol. 22, p. 525,
1902 (1904) (Honolulu; Hanalei
Bay, Kauai). — Waite, Synop.
Fishes of New South Wales, p. 41,
1904. — Jordan and Snyder, Proc.
U. S. Nat. Mus., vol. 27, p. 942, 1904
(Honolulu). — Jordan and Evermann,
Bull. U. S. Fish Comm., vol. 23, pt.
1, p. 200, fig. 78, 1903 (1905) (Honolulu).
— Jordan and Seale, Bull. Bur.
Fishes, vol. 25, p. 235, 1905 (1906)
(Apia). — Stead, Fishes of Australia,
p. , fig. 57, 1906.

minutely and feebly serrated, flange
finely crenulated. Gill rakers 9 or 10
+ 18 to 20, lanceolate, $1\frac{1}{3}$ to $1\frac{1}{2}$ in gill
filaments, which $1\frac{2}{3}$ to $2\frac{1}{3}$ in eye.

Scales 61 to 64 along above lateral
line to caudal base; tubular scales 48
to 56 in lateral line to caudal base
and 7 to 10 more on latter; 11 scales
above, 18 below, 55 to 63 predorsal
forward above nostrils; 11 transverse
rows on cheek. Suprascapula
crenulated, edge entire. Scales with
5 or 6 basal radiating striae, edge
scalloped; 87 to 70 apical denticles,
with 4 to 6 transverse series of basal
elements; circuli very fine.

D. VI, 12, I, fourth spine $2\frac{1}{2}$ to $3\frac{3}{5}$
in head, fifth ray $1\frac{3}{4}$ to $1\frac{9}{10}$; A.
III, 11, I, third spine $3\frac{1}{4}$ to $3\frac{4}{5}$,
I third ray $1\frac{3}{5}$ to $1\frac{3}{4}$; least depth of

1901

- Snyder, Proc. U. S. Nat. Mus.,
vol. 42, 1912, p. 411 (Misaki), p.
496 (Okinawa). — Ogilby, Mem.
Queensland Mus., vol. 2, p. 88, pl.
27, 1915 (Moreton and Edgemoor
Bays). — Jordan and Jordan,
Mem. Carnegie Mus., vol. 10, no. 1,
p. 41, December 1922 (Honolulu).
— Wakiya, Ann. Carnegie Mus., vol.
15, p. 213, pl. 32, fig. 4, 1924 (Misaki;
Oshima; Philippine Journ. Sci., vol. 26, no. 3, p. 401, March 1925 (Yokohama;
Bonin Islands). — Jordan and Hubbs,
Mem. Carnegie Mus., vol. 10, no. 2, p. 224,
June 25, 1925 (Tokyo; Misaki Bay;
Misaki). — Barnard, Ann. South
African Mus., vol. 21, pt. 2, p. 549, Oct.
1927 (False Bay; Agulhas Banks; Natal).
— McCulloch, Austral. Mus. Mem.,
no. 5, pt. 2, p. 191, Sep. 10, 1929 (reference).
— Weber and Beaufort, Fish. Indo-
Austral. Archip., vol. 6, p. 269, 1931 (Sabang
Bay; Minahassa; Banda; Ambon).

Scorpius vinosa Talleyne and Macleay,
Proc. Linn. Soc. New South Wales, vol. 1,
Feb. 1877, p. 277, pl. 9, fig. 2. Darnley Island.
Macleay, Proc. Linn. Soc. New South Wales,
vol. 5, 1881, p. 398 (reference). Vaillant,
Bull. Mus. Hist. Nat. Paris, vol. 3, 1897,
p.

Kyphosus waigiensis (not Quoy and Gaimard)
Jordan and Seale, Bull. Bur. Fisher.,
vol. 25, 1905 (1906); p. 271 (Apia).

Depth $1\frac{7}{8}$ to $2\frac{1}{5}$; head $3\frac{1}{4}$ to $3\frac{1}{2}$,
width $1\frac{4}{5}$ to $1\frac{7}{8}$. Snout $2\frac{7}{8}$ to $3\frac{1}{10}$ in
head; eye $3\frac{1}{3}$ to $3\frac{4}{5}$, $1\frac{1}{5}$ to $1\frac{1}{3}$ in snout,
 $1\frac{1}{3}$ to $1\frac{1}{2}$ in interorbital; maxillary
reaches eye, $1\frac{1}{8}$ in eye in young,
expansion 2 to $2\frac{1}{2}$ in eye, length 3
to $3\frac{1}{4}$ in head; teeth about 34 in
jaws, uniserial, compressed, and
pointed, entire; interorbital $2\frac{2}{3}$ to 3,
broadly convex; preopercle edge

Scomber filamentosus Munro Park,
Trans. Linn. Soc. London, vol. 3,
p. 36, 1797 (type locality, Sumatra).
— Schneider, Syst. Ichth. Bloch,
(1801) p. 34 (copied).

Gallus virescens (not Linnaeus)
Lacépède, Hist. nat. Poiss., vol. 4,
pp. 583, 584, 1803.

Blepharis fasciatus Rüppell,
Atlas Reise. Hördl. Afrika; Fische,
p. 129, pl. 33, fig. 2, 1828 (type
locality, Djeddah, Red Sea). —
Richardson, Ichth. China and Japan,
p. 271, 1846 (China).

vol. 14, 1885, p. 19 (Viao, Sanci). $\frac{1}{m}$
Day, Fauna British India, Fishes,
vol. 2, 1889, p. 49, fig. 18. $\frac{1}{m}$ Thurston,
Pearl Fisher. Gulf of Manaar, 1890,
p. 92 (Tuticorin and Pamban). $\frac{1}{m}$
Steindachner, Abhandl. Senckenberg.
Naturf. Gesellsch., vol. 25, 1900, p. 421
(Ternate).

Kyphosus cinerascens Jordan and Richardson,
Bull. Bur. Fisher., vol. 27, 1907 (1908), p.
260 (Calayan). $\frac{1}{m}$ Kendall and Radcliffe,
Mem. Mus. Comp. Zool., vol. 35, 1912, p. 120
(Cook Bay, Easter Island). $\frac{1}{m}$ Jordan
and Thompson, Proc. U. S. Nat. Mus.,
vol. 41, 1912, p. 596 (Tokyo?). $\frac{1}{m}$ Weber,
Siboga Exped., vol. 57, Fische, 1913, p.
194 (Lirung, Salibabu; Pepera Bay, Rotti).
 $\frac{1}{m}$ Agilby, Mem. Queensland Mus., vol.
2, Dec. 10, 1913, p. 90 (note on Macleay's
reference). $\frac{1}{m}$ McCulloch, Records

Blepharus indicus (not Rüppell)
Cuvier, Hist. nat. Poiss., vol. 9,
 p. 154, 1833 (Moluccas). —
Valenciennes, Règne Animal,
Cuvier, ed. ill., pl. 58, fig. 3, 1839.
 — Schlegel, Fauna Japonica, Poiss.,
 pts. 7-9, p. 113, pl. 60, fig. 2, 1845
 (coasts of Japan).
 — Richardson, Ichth. China and
 Japan, p. 271, 1845 (Japan).

Alectis indicus Wakiya, Ann. Carnegie
 Mus., vol. 15, p. 214, 1924 (Bonin Islands).

¹/_m Plafpain, Fishes of Zanzibar, 1866, p. 46 (Zanzibar).
Philippines, Amboyna ¹/_{1 1/2} Meyer,
Ann. Soc. Espan. Hist. Nat. Madrid, vol.
14, 1885, p. 18 (North Celebes). ¹/_m Elera,
Cat. Fauna Filipinas, vol. 2, 1895, p. 484
(Luzon, Manila Bay).

Pimelopterus tahmel Klunzinger,
Verhandel. zool. bot. Gesell. Wien, vol. 20,
1870, p. 795 (Red Sea). ¹/_m Proc. Linn. Soc. New South Wales,
Pimelopterus tahmel Macleay, Proc. Linn. Soc. New South Wales, vol. 9, 1885, p. 16 (note).

Pimelopterus altipinnoides Guichenot,
Notes Ile Réunion, vol. 2, 1862, p. 7 (26).

Réunion. ¹/_m Vauvage, Hist. Nat.
Madagascar, Pois., 1871, p. 271, pl. 49a.
(not 59 as stated in text), fig. 4 (Réunion).

Pachymetopon squamosum Alleyne and
Macleay, Proc. Linn. Soc. New South Wales,
vol. 1, 1877, p. 275, pl. 9, fig. 1. Wall Sound,
New Guinea. ¹/_m Macleay, Proc. Linn. Soc.
New South Wales, vol. 4, 1879, p. 62 (Solomons);
vol. 7, 1882, p. 246 (New Guinea).

vol. 5, 1881, p. 407 (reference);

Carangoides blepharis Bleeker,
 Verh. Batavia. Genoot. (Nederl.),
 vol. 24, p. 67, 1852 (type locality,
 Batavia); Nat. Tijds. Ned. Indie,
 vol. 3, p. 235, 1852 (Amboina), p.
 237 (Wuhai), p. 546 (Amboina), p.
 741 (Kema, Celebes); vol. 4, p. 576,
 1853 (Halmaheira); vol. 5, p. 234,
 1853 (Ceram); Verh. Batavia. Genoot.
 (Nal. Ichth. Japan), vol. 25, p. 15,
 1853 (reference); Nat. Tijds. Ned.
 Indie, vol. 6, p. 457, 1854 (Amboina);
 vol. 7, p. 227, 1854 (Macassar), p. 228
 (Manado, Celebes); vol. 11, p. 253,
 1856 (Laboeha, Batjan); Act. Soc.
 Sci. Ind. Nederl., No. 3, vol. 1, p. 4,
 1856 (Manado); No. 5, p. 6, 1856
 (Amboina); vol. 2, No. 7, p. , 1857
 (Amboina); vol. 3, No. 3, p. 3, 1857-
 58 (Kiozio); p. 6 (Japan); Nat.

Cyphosus cinerascens Gilchrist and
Thompson, Ann. Durban Mus., vol. 1,
pt. 4, 1917, p. 323 (part; compiled).

Pimelepterus altipinnis Cuvier, Hist. nat.
Poiss., vol. 7, 1831, p. 270. New Guinea;
Bourbon. + Cuvier - Méneville, Denogr.
Règne Animal Cuvier, vol. 4, Poiss.,
1830-44, pl. 25, fig. 1. + Guichenot,
Notes Ile Réunion, vol. 2, 1862, p. 26.

Pimelepterus dussumieri Cuvier, Hist.
nat. Poiss., vol. 7, 1831, p. 273. Gulf of
Bengal. + Valenciennes, Règne Animal,
Cuvier, Poiss. Ill., 1839, pl. 43, fig. 1.
Pimelepterus raynaldi Cuvier, Hist.
nat. Poiss., vol. 7, 1831, p. 274. Straits
of Sunda.

Pimelepterus tahnel Rüppell, Neue
Wirbelth. Fische, 1835, p. 35, pl. 10, fig. 4.
Ojeda. + Günther, Cat. Fishes Brit.
Mus., vol. 1, 1859, p. 499 (Red Sea,

1905

Tijds. Ned. Indië, vol. 16, p. 26, 1855
(Nikoe; vol. 17, p. 142, 1855-57
(Boeleling, Bali; Act. Soc. Sci.
Ind. Ned. (Sumatra), vol. 8, p.
12, 1857; Bencoolen; Nat. Tijds.
Ned. Indië, vol. 20, p. 226, 1857-60
(Boeleling, Bali).

J

Australian Mus., vol. 13, no. 2, July
20, 1920, p. 59 (St. Crispin Reef; type
of Pachymetopon squamosum). $\frac{1}{m}$ Izuka
and Matsuura, Cat. Zool. Spec. Tokyo
Mus., 1920, p. 148 (Agasawarajima).
 $\frac{1}{m}$ Herre and Montalban, Philippine
Journ. Sci., vol. 33, no. 4, Aug. 1927, p.
436, pl. 7, fig. 3 (Iha, Subic Bay,
Tanao, Taylon Island, Dumaguete,
Tubigan, Bungan). $\frac{1}{m}$ Fowler, Mem.
Bishop Mus., vol. 10, 1928, p. 221
(Society Islands, Ponapé, Shortland
and Easter Islands); Proc. Acad. Nat.
Sci. Philadelphia, 1929 (1930), p. 645
(Shortland Island).

Alectes temminckii Wakiya, Ann.
Carnegie Mus., vol. 15, p. 215, 1924
(type locality, Bonin Islands;
Iosa; Nagasaki).

Alectes breviventris Wakiya, Ann.
Carnegie Mus., vol. 15, p. 216, pl. 33,
1924 (type locality, Kii; Tokyo Bay;
Iwajima; Ryukyu; Formosa;
Bonin Islands).

14136, 23576, 23579 to 23583, 23614,
23615. Tifu Bay, Bouro Island.
December 10, 1909. Length 54 to 110 mm.

18258, 23107, 23317 and 23318, Tomahu,
Bouro Island. December 11, 1909.

14486 to 14488, 24077. Tomahu.
December 12, 1909. Length 34 to 77 mm.
35 examples.

23360. Uki Island, Bouro Island.
December 9, 1909. Length 62 mm.

15866 and 23958. Danawan and Si
vicinity Darvel Bay, Borneo.
Amil Islands, September 26, 1909.

Length 79 to 90 mm.

23384 and 23744. Danawan and Si
Amil Islands. September 27, 1909.
Length 80 to 86 mm.

1907

Depth $1\frac{1}{4}$ to $1\frac{1}{3}$, greater than length in young; head $2\frac{3}{4}$ to $2\frac{4}{5}$, width $2\frac{1}{4}$ to $2\frac{2}{3}$. Snout 3 to 4 in head from snout tip; eye $2\frac{1}{2}$, greater than snout in young to subequal with age, greater than interorbital; maxillary reaches $\frac{1}{4}$ in eye, to eye with age, expansion $2\frac{2}{5}$ to 3 in eye, length $2\frac{1}{2}$ to $2\frac{2}{3}$ in head from snout tip; interorbital 3 to 4, convexly elevated, median ridge to spinous dorsal. Gill rakers 4 + 15, lanceolate.

Lateral line without scales, straight section $1\frac{1}{10}$ to $1\frac{1}{6}$ in arch, keel and scutes very slight.

D. VI - II, 19, spines obsolete, first six rays elongated filaments longer than body; A. II - I, 16, I,

soft fin like soft dorsal, only first 4 rays filaments; caudal $1\frac{1}{10}$ to $1\frac{1}{5}$ in head, forked; ventral $1\frac{1}{4}$ in fish without caudal in young, equals head with age; pectoral reaches little beyond angle of lateral line, 1 to $1\frac{1}{8}$ in total head length.

Back gray to drab, sides and below silvery to silvery white. Iris silvery white. Young with 5 or 6 broad transverse - gray bands, broader than pale interspaces. Fins pale brown, with black blotch on front of soft dorsal and also ventral largely blackish.

1909
Red Sea, Arabia, Zanzibar,
 Natal, South Africa, Madagascar,
 Andamans, East Indies,
 Philippines, Formosa, China,
 Riu Kiu, Japan, Micronesia,
 Melanesia, Polynesia, Hawaii,
 New South Wales, Queensland.

1910

D. 5457. Legaspi Light, S. 60° W.,
5 miles (lat. $13^{\circ} 12' N.$, long. 123°
 $49' 40'' E.$), east coast of Luzon,
In 146 fathoms. June 8, 1909.
Length 33 mm.

^{new}
~~Two~~ examples. Parang,
Mindanao. May 23, 1908. Length
⁴⁸
~~95~~ to 98 mm.

Case 129

Johnius jubatus (Bleeker)

1529

Corvina jubata Bleeker, Natuurk. Tijdschr.
Nederl. Ind. vol. 5, 1855, p. 160.

Bandjermasin, in rivers, Borneo. $\frac{1}{m}$

Günther, Cat. Fishes Brit. Mus., vol. 2,
1860, p. 305 (compiled). + Duncker,

Mitteil. Naturh. Mus. Hamburg, vol. 21,
1903 (1904), p. 154 (Banjar Muharani).

Johnius jubatus Bleeker, Verhandel.

Kon. Akad. Wetensch. Amsterdam, series
3, vol. 14, 1874, p. 52 (Sumatra; Borneo);

Atlas Ichth. Ind. Néerl., vol. 9, 1877,
pl. (4) 387, fig. 5.

Depth $3\frac{1}{5}$ to $3\frac{2}{3}$; head 3 to $3\frac{1}{4}$, width
 $1\frac{3}{4}$ to 2. Snout $3\frac{4}{5}$ in head; eye $3\frac{2}{3}$ to
 $4\frac{1}{2}$, $1\frac{1}{3}$ in snout, $1\frac{1}{3}$ to $1\frac{1}{2}$ in interorbital;
maxillary reaches opposite eye center, length
3 in head; teeth villiform, above outer
row but slightly longer, lower subequal;
interorbital convex; preopercle edge

U.S.N.M., No. 47815, Port Jackson,
Australian Museum. Length 185 mm.

U.S.N.M., No. 47816, Port Jackson,
Australian Museum. Length 203 mm.

U.S.N.M., No. 51055, Hawaii.
Bureau of Fisheries (03432).
Length 110? mm.

U.S.N.M., No. 55213, Hawaii.
Bureau of Fisheries. Length
39? mm.

U.S.N.M., No. 55369, Honolulu.
Albatross Collection (1337).
Length 68? mm.

U.S.N.M., No. 55535, Hawaiian
Islands. Length 138? mm.

U.S.N.M., No. 75928, Japan?
P.L. Jour. Length 133 to 185 mm.
Two examples.

Depth $3\frac{1}{8}$; head 3, upper profile very slightly convex. Snout $2\frac{1}{5}$ in head from snout tip; eye $3\frac{1}{2}$, $1\frac{1}{2}$ in snout, equals suborbital depth; mandible slightly protrudes; maxillary reaches $\frac{4}{5}$ to eye, length $2\frac{4}{5}$ in head from snout tip; canines weak (shown as moderate on figure), hind teeth ^{small and} pointed; interorbital low, less than eye.

Scales 48 in lateral line (44 on figure); 3 above, 12 below, pre-dorsal shown forward only opposite hind preopercle ridge; no postocular scale.

D. X, 9, third spine 3 in head, third ray $2\frac{4}{5}$; A. III, 8, third spine $4\frac{3}{4}$, second ray $3\frac{1}{8}$; caudal $1\frac{1}{3}$, emarginate; least depth of caudal peduncle $3\frac{1}{10}$; pectoral $1\frac{3}{4}$; ventral $1\frac{7}{8}$. □ (Sauvage.)

Uniform greenish. Muzzle clouded. Traces of bluish streaks before eye. Length 105 mm. (Valenciennes.)

Bourbon Island. Apparently differs in the small pectoral fin, shown by Sauvage as $1\frac{3}{4}$ in the head.

Lethrinus borbonicus Valenciennes

Lethrinus borbonicus VALENCIENNES, Hist. Nat. Poiss., vol. 6, 1830, p. 303.

Saint Denis, Bourbon. — GUICHEROT, Notes Île Réunion, vol. 2, 1862, p.

25, — SAUVAGE, Hist. Nat. Madagascar, Poiss., 1891, pl. 21, fig. 2 (type)

— BARNARD, Ann. South African Mus., vol. 21, pt. 2, 1927, p. 634

(Delagoa Bay).

Depth $3\frac{3}{5}$; head $3\frac{1}{10}$, upper profile slightly depressed over eye. Snout 2 in head; eye $3\frac{1}{8}$, $1\frac{2}{5}$ in snout, equals preorbital depth; maxillary reaches $\frac{7}{8}$ to eye, length $2\frac{2}{3}$ in head; strong canines (apparently 4) in front of each jaw, hind teeth obtuse molars, each with deep longitudinal groove; interorbital low, broader than eye.

1912

U. S. N. M., No. 71152. Japan.
Albatross Collection. Length
255? mm.

A. N. S. P., one example. Natal.
1922. H. W. Bell Marley. Length
115 mm.

Provisionally I have placed Lethrinus sordidus Valenciennes and Lethrinus cocosensis Bleeker as synonyms. These are based on small or young specimens, and I find little to distinguish them. Possibly Lethrinus glyphodon Günther is another synonym. It shows: depth $2\frac{4}{5}$ to 3 times in the total length, compared with $3\frac{1}{4}$ in total length for his Lethrinus leutjanus. It was based on a dried skin 346 mm. long. Professor Schmidt has recently identified Günther's form from Riu Kiu, based on two small examples 134 and 160 mm. long.

8141, 8168, 9258. Alibijaban Island, Ragay Gulf, Luzon. March 6, 1909.

Length 204 to 250 mm. [8168.] Pale reddish longitudinal bands on sides 3, possibly another above lateral line in life, first below lateral line anteriorly crosses same below dorsal axil, second from middle of opercle back to middle of caudal peduncle, third behind pectoral base to lower caudal peduncle. Head olive, without cherry bars on opercular edges or across eye. Fins vermilion.

7836, 7837, 9359, 12207, 15970. Bugsuk Island, Balabac. January 5, 1909.

Length 230 to 286 mm.

A521. Eulan Island. September 13, 1909. Length 298 mm.

A578. Busbus Point, Siasi Island. September 20, 1909. Length 318 mm.

17693. Busin Harbor, Burias Island. March 8, 1909. Length 223 mm.

8805. Butauanan Island, Luzon. June 13, 1909. Length 300 mm.

8376. Calangaman Island. March 16, 1909. Length 260 mm.

7790, 7791. Candaraman Island, Balabac. January 4, 1909. Length 258 to 275 mm.

8851. Dasol Bay. May 9, 1909. Length 275 mm.

6623. East side, Verde Island. July 22, 1908. Length 282 mm.

18833. Endeavor Strait, Palawan. December 22, 1908. Length 198 mm.

8993. Gubat Bay. June 23, 1909. Length 274 mm.

Genus Scyris Cuvier

Scyris Cuvier, Règne Animal, ed.
2, vol. 2, p. 209, 1829. (Type

Gallus alexandrina ~~Bonaparte~~

Geoffroy Saint Hilaire, monotypic.)

147
f.¹ Caudal cuneate, with median point behind.

Atothooides^{marginis}

f.² Caudal emarginate. Atractoscion.

b.² Johninae. Pores on chin.

g.¹ Soft dorsal and anal densely scaly; silvery dermal spots or photophore like body on under surface of body. Pseudosciaena.

g.² Soft dorsal and anal less scaly, nearly naked or scales confined basally on fins; no silvery dermal spots. Johnia.

a.² Sciaeninae. A single barbel at chin.

Sciaena.

Canis 3
manus only

Body greatly compressed, very deeply ovoid, edges trenchant. Head moderate, strongly compressed. Snout deep, well compressed. Eye moderate, high. Mouth inclined, mandible protruding. Maxillary nearly reaches eye, expanded behind. Teeth in villiform bands in jaws, on vomer, palatines and tongue. Nostrils together. Preorbital depth much greater than eye-diameter. Gill rakers lanceolate, 25 below. Scales extremely minute or absent. Lateral line strongly curved anteriorly, straight and horizontal below middle of dorsal and scutes very small. First dorsal not developed in

1915

adult, distinctly visible in
young. Front six dorsal and
anal rays filiform, short
with age. Ventrals elongate,
filiform. Silvery, young with
dark vertical bands.

Species several in tropical
seas.

Scyris indica Rüppell

Scyris indicus (Cuvier) Rüppell,
Atlas Reise nördl. Afrika,
Fische, p. 128, pl. 33, fig. 1, 1828
(type locality, Djedda, Red Sea);
Neue Wirbelth., Fische, p. 51,
1835 (reference). — Cantor, Journ.
Asiatic Soc. Bengal, vol. 18, pt. 2,
p. 1116, 1849 (1850) (Pinang Sea).

Analysis of the genera ~~to be made~~

a.' no barbels at chin.

b.' no pores at chin.

c.' Otolithinae. Canines in front of both jaws, conspicuous. Otolithes.

c.² Collichthyinae. Dentition weaker, without conspicuous front canines or only outer row of teeth in jaws sometimes little enlarged.

d.' Soft dorsal very long, rays 40 to 43, fin base 3 times that of spinous dorsal; pectoral long as head. Pamphor

d.² Soft dorsal shorter, rays less than 40; pectoral less than head. Pamphor

e.' Bones of head loose, more or less cavernous; mouth well inclined; luminous or photophore like bodies on under surface of body. Collichthys.

e.² Bones of head firm; mouth less inclined; no photophore like bodies. Cav³
named only

Scyris indica Cuvier, Hist. Nat.

Pois., vol. 9, p. 145, pl. 252, 1833

(Pondicherry; Java; Massana).

— Swainson, Nat. Hist. Animals,

vol. 2, p. 251, 1839 (on Cuvier pl. 252).

— Richardson, Ichth. China and
Japan, p. 276, 1846 (China seas).

caudal base, symmetrical with second; bands all broader below, where about $\frac{2}{3}$ pupil diameter.

Breast and belly with orange wash. Iris silvery except as crossed by dark band. Soft vertical fins very pale hyaline vermilion.

Pectorals hyaline pink. Ventrals slightly orange.

1 example. Tongue Island, east of Gumila Reef, south of Zamboanga. September 14, 1909. Length 36 mm.

1 example. Usada Island, vicinity of Jolo. March 3, 1908. Length 48 mm.

8039. Taminiao Island. February 26,

1908. Length 57 mm. [male with buccal ova.]
Also 5 others, same data: Length 50 to 58 mm.

Seyris indica

— Fowler, Journ. Acad. Nat. Sci.
Philadelphia, ser. 2, vol. 12, p. 513,
June 10, 1904 (Padang); Proc. Acad.
Nat. Sci. Philadelphia, vol. 57, p.
86, Jan. 1905 (Padang material).

— Fowler, Copeia, no. 58, p. 63,
June 18, 1918 (Philippines). —
Fowler and Bean, Proc. U. S. Nat.
Mus., vol. 62, art. 2, 1922, p. 21
(Tabao). — Fowler, Occas. Pap.
Bishop Mus., vol. 8, no. 7, p. 378,
1923 (Honolulu); Proc. Acad.
Nat. Sci. Philadelphia, vol. 77,
1925, p. 217 (Delagoa Bay); &
Mem. Bishop Mus., vol. 10, p. 151,
1928 (Honolulu; New Guinea);

1445

91 flange . . . D, I, 25, third and fourth
spines subequal or $1\frac{2}{3}$ in total head,
fourth ray 2; A, II, 8, I, second spine
enlarged and robust, longer than rays,
 $1\frac{3}{5}$; caudal $1\frac{1}{3}$, truncate; least depth
of caudal peduncle $2\frac{7}{8}$; pectoral $1\frac{2}{5}$;
ventral $1\frac{1}{4}$.

Above gray or bluish green, sides and
below silvery. Iris yellow, orbital edge
brownish. Fins yellowish, verticals dusted
with brown. Length 225 mm. (Bleeker.)

This nominal form is likely American,
~~likely~~ ^{evidently} *Bairdiella armata* Gill from
Panama. The single specimen in the
Hamburg Museum alleged by Bleeker to
have come from Japan.

vol. 11, no. 5, p. 327, 1931 (reference);
vol. 11, no. 6, p. 405, 1934 (reference);
Proc. Acad. Nat. Sci. Philadelphia,
vol. 86, (1934) p. 450, (natal); vol.
87, p. 142, 1935 (Bangkok; Sriracha;
Paknam).

(on B. epher). ~~1004~~

Depth $3\frac{1}{2}$; head $3\frac{3}{4}$, width 2.

Snout 4 in head from snout tip; eye $4\frac{3}{4}$, $1\frac{1}{8}$ in snout, 1 in interorbital; maxillary reaches $\frac{1}{2}$ in eye, expansion $1\frac{2}{3}$ in eye, length $2\frac{2}{3}$ in head from snout tip; lower jaw little protruding; teeth anteriorly pluriserial, become biserial on sides of jaws; outer upper teeth conic, well spaced, without canines, inner very small; lower teeth with outer row very small, inner conic, well spaced and not large as outer upper teeth though 2 to 4 somewhat enlarged before symphysis; interorbital 4 in head, low; preopercle serrae strong, especially 2 or 3 at angle and where pointing down. Scales 63 along above lateral line, 53 along below, 57 tubes in lateral line (on figure), 10 above, 9 below; 5 rows in cheek to preopercle ridge, with 3 more on preopercle

Alectes indicus Bean and Weed,
Proc. U. S. Nat. Mus., vol. 42, p. 600,
1912 (Batavia). — Jordan and
Jordan, Mem. Carnegie Mus., vol. 10,
no. 1, p. 41, Dec. 1922 (Honolulu). —

[Barnard, Ann. South African Mus.,
vol. 21, pt. 2, p. 550, Oct. 1927 (Delagoa
Bay).]

[Wakiya, Ann. Carnegie Mus., vol. 15,
p. 214, 1924 (Bonin Islands).]

rest of head, median pale line
from interorbital to spinous dorsal.
Pale line from each parietal region
up and along bases of dorsals and
unite behind soft dorsal to form
single median line along upper
surface of caudal peduncle. Third
pale line from snout above, over
eye back along lateral line at first
to middle of upper caudal lobe
basally. Fourth pale line from iris
above back over upper postocular
region. Fifth pale line over postocular
and along median axis of body to
caudal base medianly. Sixth pale
line from infraorbital to pectoral
axil and back along lower face of
caudal peduncle to middle of base
of lower caudal lobe.

1921

Alectes indica Ogilby, Mem.
Queensland Mus., vol. 3, p. 83,
pl. 26, 1915 (Burnett River).

— McCulloch, Austral. Mus. Mem., no.
5, pt. 2, p. 191, Sep. 10, 1929 (reference).

1003

pointed. Length 138 mm. (Günther.)

A doubtful species with uncertain locality. Günther says "This species may be readily distinguished by the small number of the dorsal rays. At present, I know of no better place for it, its physiognomy is not that of a Sciaena."

It surely does not seem to agree with any Indo-Pacific sciaenoid known to me. As its locality is in question possibly it may be American, as it suggests Bairdiella chrysura.

Bairdiella
~~Pseudosciaena~~ acanthodes (Bleeker). Cavendish
Pseudosciaena acanthodes Bleeker,
Verhandel.^{Kon.} Natuurk. Wetensch. Amsterdam,
vol. 18, no. 6, 1879, p. 27, pl. 1. Japan.

Bairdiella acanthodes Jordan and Snyder,
Annotat. Zool. Japon., vol. 3, pts. 2-3, 1901, p.
81 (name only). — Jordan and Thompson,
Proc. U. S. Nat. Mus., vol. 39, 1911, p. 242

Zeus gallus (not Linnaeus) Bloch,
Naturges. Ausland. Fische,
vol. 6, p. 38, pl. 192, fig. 1, 1787
("America" [= East Indies in part]).
— Bonnaterre, Tabl. Ichth., p. 76, pl.
38, fig. 153, 1788 (India). — Gmelin,
Syst. nat. Linn., pt. 1, p. 1220, 1789
(India). — Bloch, Naturges.
Ausland. Fische, vol. 9, p. 99, 1795
(Tranquebar). — Walbaum, Artedi
Pisc., vol. 3, p. 396, 1795 (copied). —
Forster, Fauna Indica, p. 14, 1795.
— Schneider, Syst. Ichth. Bloch,
p. 94, 1801 (India).

1402

African Mus., vol. 21, pt. 2, October
1927, p. 569) this is not a sciaenoid
as it has 3 anal spines. Its formula
is given as: D. XI, 14; A. III, 9.

Sciaena brevadorsalis Günther Cat.
Sciaena brevadorsalis Günther, Cat.
Fishes Brit. Mus., vol. 2, 1860, p. 295.
East Indies?

Depth 4; head 4. Snout short, obtuse,
shorter than eye; eye $3\frac{1}{2}$, less than
interorbital; maxillary reaches little
beyond center of eye; upper jaw
overlaps lower; mouth cleft very
oblique; outer row of premaxillary
teeth scarcely enlarged; preopercle
rounded, denticulate throughout. Scales
47 in lateral line. Suprascapula very
large, would cover eye, edge with flexible
setiform teeth. D. X, III, 17; A. II, 11, second
spine $2\frac{2}{3}$ in head; caudal elongated,

Caranx gallus Günther, Cat.

Fish. Brit. Mus., vol. 2, p. 455,
1860 (Malay Peninsula; China). —

— Day, Proc. Zool. Soc. London, p. 25, 1865
(Cochin, Malabar); Fishes of Malabar,
p. 91, 1865. — Playfair, Fishes of

Zanzibar, p. 62, 1866 (Aden; East Africa).

— Schmeltz, Cat. Mus. Godeffroy, no. 4,
p. 17, 1869 (Kandavu).

— Klunzinger, Verh. zool. bot. Gesell.
Wien, vol. 21, p. 454, 1871 (Red Sea).

— Schmeltz, Cat. Mus. Godeffroy, no. 5,
p. 27, 1874 (Viti Islands). — Günther,

Journ. Mus. Godeffroy, vol. 5, pt. 11, p.
135, 1876 (Hawaii; Society Islands).

— Day, Fishes of India, pt. 2, p. 224,
pl. 57, fig. 3, 1876. — Peters, Monatsb.

Akad. Wiss. Berlin, p. 836, 1876 (1877)
(New Ireland).

1907

inferior quality. Some species are
hunted by anglers as they furnish
sport.

These fishes are often known as
'croakers', 'grunters' or 'drums', due
to their producing sounds, usually
heard under the water during the
breeding season. It is produced,
apparently by muscular movement
of the air bladder.

Three nominal forms, not recognized
since originally described and of
uncertain status are here appended.

Corvina punctata Castelnau. Cuv. 129

Corvina punctata Castelnau, Mém.

Poiss. Afrique Australe, 1861, p. 9.

Port Natal. $\frac{1}{2n}$ Gilchrist and Thompson,

Ann. Durban Mus., vol. 1, no. 4, 1917, p.

350 (compiled).

According to Barnard $\frac{10}{10}$ $\frac{10}{10}$ 8 h. 20.00
(Ann. South

— Macleay, Proc. Linn. Soc. New South Wales, vol. 5, pt. 4, p. 538, 1881 (Endeavour River, Queensland). — Karoli, Termesz. Füzetek, Budapest, vol. 5, p. 161, 1881 (Singapore).

— Boulenger, Proc. Zool. Soc. London, p. 661, 1887.

— Kent, Great Barrier Reef, ^{pl. 16, fig. 2} p. 289, 1893; Natural. in Australia, p. 169, text figs 153, 1897; p. 153, pl. 27, fig. A.

— Stead, Edible Fish. New South Wales, p. 88, pl. 58, 1908.

246

with small crimped basal scale.
Scales with
7 to 12 basal radiating striae; 76 to 84
apical denticles with 1 or 2 transverse
series of basal elements; ~~annular~~ circuli
fine.

D. VII - I, 9, I, third spine 2 to $2\frac{1}{4}$ in
total head length, first ray $1\frac{2}{3}$ to
 $1\frac{4}{5}$; A. II, 8, I, second spine $2\frac{7}{8}$ to
 $3\frac{1}{4}$, first ray $1\frac{3}{4}$ to $2\frac{1}{5}$; caudal $1\frac{2}{5}$
to $1\frac{1}{2}$, hind edge emarginate;
least depth of caudal peduncle
 $2\frac{4}{5}$ to 3; pectoral $1\frac{3}{5}$ to $1\frac{2}{3}$;
ventral $1\frac{3}{5}$ to $1\frac{2}{3}$.

Pale brown generally, lighter
below, with silvery white sheen
largely with pale lilac tints.
Iris silvery gray, little more
grayish above. Snout and front
more or less deeper brownish than

1925

Carangoides gallus Bleeker, Versl.
Kon. Akad. Wet. Amsterdam,
vol. 12, pp. 53, ^(Singapore) 74, 1861 (Pinang);
vol. 14, p. 109, 1862 (Batjan).

Citula gallus Bleeker, Ned. Tijds.
Dierk., vol. 1, p. 242, 1863 (Obi);
vol. 2, p. 174, 1865 (Siam);
Verslag. Kon. Akad. Wet. Amsterdam,
ser. 2, vol. 2, pp. 293, 300, 1868 (Rio,
Bintang), ^{Ned. Tijds. Dierk.} vol. 4, p. 132, 1873 (1874)
(reference); ^{Rech.} Faune Madagascar,
Pollon et Van Dam, pt. 4, p. 99, 1874
(reference).

Scyris gallus Klunzinger, Fische
Roth. Meer., vol. 1, p. 101, 1884.

Caranx (Alectis) gallus Stead, Additions
Faun. New South Wales, p. 16, pl. 4,
1907.

tubes frequently branched. Dorsal deeply notched or divided as spinous and soft rayed sections, latter usually longer. Anal usually much shorter than soft dorsal, spines 1 or 2, rarely 3. Caudal variably truncate, cuneate or pointed, never forked. Ventrals thoracic, with spine and 5 rays.

A large group of perch like fishes, living in most warm seas except Oceania. All are shore forms and none live in the deep seas though a few live in fresh water. Many are highly valued food fishes, some with choice well flavored flesh. Several species of large size are important fishery products, though the average is from 12 to 18 inches. In some countries the large air bladder is valued as a singlass of

1926

Alectes gallus Oshima, Philippine
Journ. Sci., vol. 26, no. 3, p. 399,
March 1925 (Taihoku, Formosa).

Hora, Mem. Asiatic Soc. Bengal,
vol. 6, pt. 9, p. 484, 1924 (Singgora).—

Can 129 Upeneichthys vlamingii (Cuvier) 1052

Upeneus vlamingii Cuvier, Hist. Nat. Poiss.,
vol. 3, 1829, p. 452, pl. 71. ~~Motuaro Island,~~
Queen Charlotte Sound. $\frac{1}{m}$ Richardson,
Ann. Mag. Nat. Hist. London, vol. 9, 1842,
p. 211 (Motuaro Island, Queen Charlotte
Sound); Travels in New Zealand, Dieffen-
bach, vol. 2, 1843, p. 207. $\frac{1}{m}$ Castelnau, Proc.
Zool. Acclimat. Soc. Victoria, vol. 2, 1873,
p. 39 (Melbourne market); Proc. Linn.
Soc. New South Wales, vol. 3, 1878, p.
(350) 372 (Port Jackson).

Upeneoides vlamingii Günther, Cat. Fishes
Brit. Mus., vol. 1, 1859, p. 400 (compiled).
 $\frac{1}{m}$ Macleay, Proc. Linn. Soc. New South Wales,
vol. 5, 1881, p. 403 (Port Jackson, Port
Phillip). $\frac{1}{m}$ Fowler, Proc. Acad. Nat. Sci.
Philadelphia, 1923, p. 44 (Melbourne);
1929 (1930), p. 648 (Melbourne examples).

1927

Gallichthys major Cuvier, Hist.

Nat. Poiss., vol. 9, p. 168, pl. 254

(young), 1833 (type locality,
Pondicherry).

— Richardson, Ichth. China Japan,
p. 271, 1846 (China seas).

— Bleeker, Verh. Batavia. Genoot.
(Bali), vol. 22, p. 3, 1849 (west
coast of Bali); (Java), vol. 23,
p. 8, 1850 (Java).

Cantor, Journ. Asiatic Soc. Bengal,
vol. 18, pt. 1, p. 136, 1849 (1850).
(Pinang Sea; Singapore).

narrow, only $\frac{2}{3}$ width of maxillary expansion.

Scales 75 in lateral line; 5 or 6 above, 11 below (13 in figure above anal origin), predorsal forward at least opposite front of eye, 5 rows across cheek to premaxillary ridge and 4 more rows across preopercle flange; muzzle, inclusive of maxillary, naked.

D. X, 26 or 27, fifth spine 2 in total head length, first branched ray $2\frac{1}{5}$; A. III, 23 or 24, third spine $3\frac{3}{4}$, first ray $2\frac{4}{5}$; least depth of caudal peduncle $3\frac{2}{3}$; pectoral $1\frac{1}{5}$; ventral $1\frac{4}{5}$; caudal $3\frac{3}{5}$ in combined head and body to caudal base, fin widely forked.

Upper half of body blue gray, below silvery white. Dorsal and anal dark brownish gray. Caudal and paired fins paler, with tinge of yellowish or

Alectes major Jordan and
Richardson, Bull. Bur. Fisher.,
vol. 27, p. 251, 1907 (1908) Formosa;
Manila; Mem. Carnegie Mus.,
vol. 4, no. 4, p. 180, 1909 (Takao).
— Snyder, Proc. U. S. Nat. Mus.,
vol. 42, 1912, p. 411 (Formosa). —
Oshima, Philippine Journ. Sci.,
vol. 26, p. 400, March 1925 (copied).

129

Cypselichthys japonicus Steindachner and
Döderlein

Cypselichthys japonicus Steindachner and
Döderlein, Denkschr. Akad. Wiss., Wien,
math.-naturwiss. Classe, vol. 48, 1884, p.
15, pl. 7, fig. 1. Tokio and Yokohama.
+ Shibawa and Matsuura, Prelim. Cat.
Fishes Mus. Tokyo, 1897, p. 57. + Franz,
Abhandl. Kon. Bayer. Akad. Wiss., vol. 4,
supplement band 1, 1910, p. 47 (Yokohama).

Depth $3\frac{4}{5}$; head 4. Snout $4\frac{3}{4}$ in head
from snout tip; eye $3\frac{4}{5}$, little greater
than snout; maxillary reaches $\frac{1}{5}$ in
eye, expansion $2\frac{1}{5}$ in eye, length 3 in
head from snout tip; teeth minute,
in narrow band in jaws, also patch
on vomer and palatines; interorbital
 $3\frac{1}{2}$, convex; preopercle edge denticulate
(entire in figure); suborbital very

Gallichthys chevola Cuvier,
Hist. nat. Poiss., vol. 9, p. 175, 1833
(~~type locality~~, on Chevola parah
Russell, Fishes of Coromandel, vol. 1,
p. 46, pl. 58, 1803, type locality,
Vizagapatam).

Scyres rüppellii Swainson, Hist.
Animals, vol. 2, p. 251, 1839
(on Rüppell pl. 33).

Cores 30
1395

Genus Cypselichthys Steindachner and Döderlein
Cypselichthys Steindachner and Döderlein,
Denkschr. Akad. Wiss. Wien, math.-
naturwiss. Classe, vol. 48, 1884, p. 14. Type
Cypselichthys japonicus Steindachner
and Döderlein, monotypic.

Body compressed, rather slender.
Head rather small, obtuse. Eye large,
well advanced. Mouth terminal, small.
Very small teeth in both jaws, on vomer,
tongue, palatines and pterygoies.
Preopercle very finely denticulate. ~~Stethacanth~~
~~stethacanth~~ Branchiostegals 7. Scales
ctenoid. Dorsal continuous, spines slender.
Soft dorsal and anal with long bases
and well scaled. Caudal well forked,
lobes long and slender. Ventral inserted
behind pectoral bases.

1930

Blepharis gallichthys Swainson,
Nat. Hist. Animals, vol. 2, p. 250,
1839 (on Cuvier pl. 254).

Carangoides gallichthys Bleeker,
Nat. Tijds. Ned. Indie, vol. 2, p.
471, 1851 (Rio); vol. 3, p. 690, 1852
(Wahai), p. 717 (Karang hadji,
Banka); Verh. Batavia. Genoot.
(makreel.), vol. 24, p. 68, 1852
(Batavia, Pasuruan, Banjarmasin,
Samarang); (Bengal), vol. 25,
p. 44, 1853 (reference); Nat. Tijds.
Ned. Indie, vol. 7, p. 227, 1854
(Macassar), p. 312 (Bantem), p. 361
(Butjan); vol. 8, p. 393, 1855
(dumbrina); vol. 9, p. 282, 1855
(Macassar), p. 394 (North Pasuruan);
vol. 10, p. 347, 1856 (Rio, Bintang);

⁴⁷ Family Sciaenidae Can 121

Body somewhat elongated, oblong.
Mouth variously moderate to large,
more or less protractile. Maxillary
entirely or partly slips below preorbital,
without supplementary maxillary.
Teeth mostly villiform; an enlarged
row of canines sometimes present.
Palate and tongue toothless. Nostrils
double. Suboculars, when present,
narrow. Gill membranes free from
isthmus. Gills 4, slit behind fourth.
Pseudobranchial usually present.
Air bladder usually present, mostly
large and with lateral appendages.
Otoliths large. Vertebral 24 to 30.
Stomach coecal; intestine with 2
convolutions. Pyloric appendages few,
feeble. Scales cycloid or more or less
finely ctenoid. Lateral line single,

vol. 11, p. 253, 1856 (Laboeha, Butpan),
p. 419 (Muntok, Banka); ^{vol. 12, p. 245, 1856 (Sias)} lect.
Ned. Ind. heerl., vol. 1, no. 3,
p. 9, 1856 (Macassar); vol. 3, no. 9,
p. 2, 1857-58 (Padang), p. 5
(Priaman), p. 6 (Siboga); Nat.
Tijds. Ned. Indië, vol. 21, p. 138,
1860 (Muntok, Banka); vol. 22,
p. 108, 1860 (Muntok).

1578
greenish. Large dark blotch at pectoral
origin. Length 185 mm.

(Steindachner and Döderlein.)

Japan.

1932

Alectes ciliaris (not Bloch) Jordan
and Evermann, Proc. U. S. Nat. Mus.,
vol. 25, p. 338, 1902 (Formosa).

Depth $2\frac{2}{3}$ to $2\frac{3}{5}$; head $2\frac{1}{4}$ to $2\frac{2}{5}$,
 width $1\frac{7}{8}$ to 2. Snout $4\frac{2}{5}$ to 5 in
 head from snout tip; eye $2\frac{1}{2}$ to $2\frac{3}{4}$,
 much greater than snout or
 interorbital; maxillary reaches
 $\frac{3}{5}$ in eye, expansion 3, length 2 to
 $2\frac{1}{4}$ in head; teeth villiform, in
 bands in jaws and on vomer
 and palatines; interorbital 5 to
 $5\frac{1}{2}$, nearly level; preopercle ridge
 entire, hind edge finely serrated.
 Gill rakers 8 + 16, greater than
 gill filaments or 2 to $2\frac{3}{4}$ in eye.
 Scales 21 to 23 in lateral line
 to caudal base and 3 or 4 more
 on latter, 2 above, 6 below, 3
 predorsal, 2 rows on cheek; head
 naked, except cheeks and opercles.
 Tubes large, simple, well exposed,

Depth $1\frac{1}{8}$ to 2; head $2\frac{1}{2}$ to $3\frac{1}{5}$, width $2\frac{7}{8}$ to 3. Snout $1\frac{7}{8}$ to $2\frac{1}{8}$ in head from snout tip; eye 4 to $4\frac{2}{5}$, $1\frac{2}{3}$ to $2\frac{1}{5}$ in snout, greater than interorbital in young to $1\frac{1}{5}$ in interorbital with age; lips narrowly marginal; maxillary preaches $\frac{1}{2}$ to $\frac{3}{5}$ to eye, expansion $1\frac{3}{4}$ to $2\frac{1}{3}$ in eye, length $2\frac{7}{8}$ to 3 in head from snout tip; interorbital $4\frac{1}{4}$ to $5\frac{1}{8}$, convexly elevated, with high, trenchant, median ridge. Gill rakers $10 + 24$, lanceolate, equal gill filaments or $1\frac{3}{5}$ in eye.

Pores $67 + 50$ in lateral line, arch $1\frac{1}{5}$ to $1\frac{1}{4}$ in straight section. Scales very minute, few.

D. VI - I, 18, I, spines very low, obsolete, first 7 rays filamentous and longest to end of caudal; A. I, 16, I, first 3 rays filamentous of which first longest or but little shorter than dorsal; caudal $1\frac{1}{10}$ to $1\frac{1}{5}$ in total head, forked; least depth of caudal peduncle 7 to $8\frac{2}{3}$; pectoral $1\frac{2}{3}$ to $1\frac{3}{4}$ to caudal base, $2\frac{3}{5}$ to $2\frac{2}{3}$ in fish without caudal, falcate; ventral ends in long filament nearly reaching caudal base, $1\frac{7}{8}$ to 2 in total head with age.

Back above eye brown, below silvery white. Five broad, gray, vertical bands,

1935

nearly twice as wide as pale interspaces. Opercle deep olive above. Fins pale, whitish on dorsal and anal basally, dark gray to blackish terminally. Caudal gray. Pectoral pale. Ventral blackish.

Red Sea, East Africa, Delagoa Bay, Madagascar, India, Malaya, East Indies, Philippines, Siam, China, Formosa, North Australia, Western Australia, New South Wales, Melanesia, Polynesia, Hawaii.

1936

8478. D. 5424. Pagayan Island
(S.), S. 11° W., 3.4 miles (Lat. $9^{\circ}37'05''$
N., $121^{\circ}12'37''$ E.), Zolo Sea.
In 340 fathoms. March 31, 1907
Length 480 mm.

6712. Cavite market. December
1, 1905. Length 185 mm.

6104. Iloilo market. June 1, 1908.
Length 525 mm.

20604, 20605. Lingayen Gulf
(east of Port Guicet), west coast
of Luzon. May 11, 1909. Length 45 to 48 mm.

One example. Iato River, Luzon,
tidewater. June 16, 1909. Length 36 mm.

Eight examples. Parang, Mindanao.
May 23, 1908. Length 47 to 58 mm.
Some show 7 broad transversely
darker bands on body. The
blackish dorsal, anal and ventral
filaments are longer than in
Walsby's figure.

$\frac{1}{n}$ Malpas, Ceylon Administrat. Rep., 1921, pp. E5, E6, E8. ~~1155~~

Jordan and Hubbs, Mem. Carnegie

Mus., vol. 10, no. 2, June 27, 1925, p. 247

(Kagoshima Bay). $\frac{1}{m}$ Fowler, Bull.

Bishop Mus., no. 22, 1925, p. 33 (Vamoa).

$\frac{1}{m}$ Fowler and Ball, Bull. Bishop

Mus., no. 26, 1925, p. 16 (Wake Island).

$\frac{1}{m}$ Harre and Montalban, Philippine Journ.

Sci., vol. 36, no. 1, May 1928, p. 115, pl. 2, fig.

1 (La Union, Mindoro, Bacor, Tacloban,

Bantayan, Cebu, Puerto Princesa, San Juan,

Cagayan de Misamis, Zamboanga, Jolo).

$\frac{1}{m}$ Fowler, Mem. Bishop Mus., vol. 10,

1928, p. 230 (Wake Island, New Guinea,

Apia, Society Islands, Vamoa). $\frac{1}{m}$

Tirant, Service Océanogr. Pêch. Indo

Chine, 1929, note 6, p. 168 (Phu Yen).

$\frac{1}{m}$ Fowler, Proc. Acad. Nat. Sci. Philadelphia,

1929 (1930), p. 648 (Vamoa and Palang). $\frac{1}{m}$

Schmidt, Trans. Pac. Comm. Acad. Sci. USSR, vol. 1,

1930, p. 60 (Itoman, Riu Kiu).

1937

6816. Kowloon market.

• September 19, 1909. Length 170 mm.

p. 480 (Luzon, Camarines Sur, Pasacao).
+ Ishikawa and Matsuura, Prelim.
Cat. Fishes Mus. Tokyo, 1897, p. 54. $\frac{1}{m}$
Fowler, Proc. Acad. Nat. Sci. Philadelphia,
1900, p. 526 (Samoa). $\frac{1}{m}$ Jordan and Snyder,
Unnotat. Zool. Japon., vol. 3, 1901, p. 84
(Nagasaki). $\frac{1}{m}$ Jordan and Evermann,
Proc. U. S. Nat. Mus., vol. 25, 1902, p. 334
(Keelun and Giran, Formosa). $\frac{1}{m}$ Regan,
Journ. Bombay Nat. Hist. Soc., vol. 16,
no. 2, 1905, p. 331 (Muscot). $\frac{1}{m}$ Gilchrist
and Thompson, Ann. South African Mus.,
vol. 6, 1908-11, p. 164 (Durban, Natal). $\frac{1}{m}$
Jordan and Richardson, Mem. Carnegie
Mus., vol. 4, no. 4, August 28, 1909, p. 192
(Takao). $\frac{1}{m}$ Snyder, Proc. U. S. Nat. Mus.,
vol. 42, 1912, p. 502 (Ikkinawa). V-1
Gilchrist and Thompson, Ann. Durban
Mus., vol. 1, pt. 4, 1917, p. 364 (references,
except Gilchrist and Thompson 1908). $\frac{1}{m}$

U. S. N. M., no. 30531, New Guinea, ¹⁹³⁸
Australian Museum. Length 390 mm.

U. S. N. M., no. 56331. Cavite.
Dr. G. ~~S.~~ S. Lung. Length 170 to 175
mm. Three examples.

U. S. N. M., no. 57553. Japan.
P. L. Jouy. Length 110 mm.?

U. S. N. M., no. 58005. Zamboanga.
Dr. E. A. Mearns. Length 328 mm.
As Alectes ciliaris.

U. S. N. M., no. 72605. Java.
D. Bryant and W. Palmer. Length 282
mm.

U. S. N. M., no. 76615. Formosa.
Dr. Fred Baker. Length 162 mm.

U. S. N. M., no. 87071. Foochow.
A. Sowerby. Length 69 mm.

U. S. N. M., no. 88018. Benkoelan,
Sumatra. November 1925.
Length 64 mm.

174

Family Enoplosidae

Body deep, strongly compressed.
Head small. Eye anterior, rather large. Mouth small, oblique, lower jaw well protruded. Preorbital with lower edge denticulate. Pseudobranchial present. Branchiostegals 7. Pyloric appendages 15. Air bladder large. Vertebral 27, of which 17 caudal. Lateral line complete, strongly arched. Scales cycloid. Bases of vertical fins scaly. Dorsals, anals and ventrals elevated or prolonged. Caudal small. Pectoral short. Ventral with spine and 5 rays, longer than pectoral.

1939

A. N. S. P., one example. Delagoa Bay,
Portuguese East Africa. 1922.
H. W. Bell Marley. Length 190 mm.

feebly denticulate. Gill rakers $14 + 21$, lanceolate, little greater than gill filaments or equal eye.

Scales 52 or 53 in lateral line to caudal base and 6 or 7 more on latter; 7 or 8 above, 10 to 12 below, 24 or 25 predorsal forward nearly opposite eye; 4 rows on cheeks to preopercle ridge. Scales with 1 to 5 short basal radiating striae; 20 to 30 obsolete, irregular apical points, often vestigeal; circuli moderately fine.

D. IX, 16 , I, fourth spine 2 in total head length, first ray $2\frac{2}{3}$ to 3 ;
A. III, 10 , I, third spine $4\frac{1}{4}$ to $4\frac{2}{3}$, first

Genus Hynnus Cuvier

Hynnus Cuvier, Hist. nat. Poiss.,
vol. 9, p. , 1833. (Type Hynnus
goreensis Cuvier, monotypic.)

Body deep, greatly compressed,
angular, edges all trenchant.
Head deep, compressed, upper
profile rounded. Teeth persistent,
in bands in jaws, minute on vomer
and palatines. Shoulder girdle
with deep cross furrow. Lateral
line with long arch, straight shorter
section with few weak scutes
on side of caudal peduncle.
Dorsal and anal lobes without
filaments, low. No finlets. Caudal
widely forked. Pectoral moderate.

Species few, large in size, in
tropical seas.

first spine upward to tip of third membrane. Other vertical fins like body but with pinkish shades.

Paired fins dusky pink.

23930. Limbones Cove, Luzon. February 8, 1908. Length 92 mm. [1129]. Pearly, with dusky shades. Pronounced dark band from snout to near caudal base, at latter superiorly small round black blotch. Oblique narrow brown stripe across front of first dorsal, including all of first spine and terminal half of third membrane. Other fins very pale pink. Dusky bar across base of second dorsal and anal, includes last rays and these and margins of vertical fins more or less dusky.

24045. Malanipa Island, east of Zamboanga. September 8, 1909. Length 60 mm.

^{@ Hynnus}
Carangoides ajax (Snyder)

1941

Carangoides ajax Snyder, Bull.
U. S. Fish Comm., vol. 22, p. 524,
pl. 8, fig. 15, 1902 (1904) (type
locality, Honolulu). — Jordan
and Evermann, Bull. U. S. Fish
Comm., vol. 23, pt. 1, p. 200, 1903
(1905) (type). — Fowler and Ball,
Bull. Bishop Mus., no. 26, p. 13,
1925 (Laysan). — Fowler, Mem.
Bishop Mus., vol. 10, p. 151 (type;
Honolulu).

Hynnus ajax E. K. Jordan, Proc. U. S.
Nat. Mus., vol. 66, art. 33, p. 17, 1925
(Honolulu).

~~685~~
The species is known by its
elongate or more slender body
than in most species of the genus,
its small scales, scaly preorbital
and the soft dorsal and anal
subequal with or higher than the
spinous fins.

Depth $2\frac{3}{5}$; head $3\frac{3}{5}$. Snout $2\frac{1}{4}$ in head; eye 5, $2\frac{1}{4}$ in snout; maxillary reaches $\frac{2}{5}$ in eye, length $2\frac{1}{2}$ in head; villiform teeth in bands, in jaws, on vomer, palatines and tongue; interorbital $3\frac{1}{2}$ in head, greatly elevated and convex in profile, eye $1\frac{1}{3}$ in supraorbital depth. Lower gill rakers 14, equal maxillary expansion.

Head with small, deeply imbedded scales behind and below eye, otherwise naked. Body mostly naked, except irregular area along lateral line with small, imbedded scales. Lateral line with long arch, straight section $\frac{4}{5}$ of arch; scutes about 32 of which 3 or 4 posterior enlarged until half depth of caudal peduncle, others all small or

obsolete anteriorly.

D. 19, without spinous fin, height of front lobe $1\frac{7}{8}$ in head; A. 16, height of front lobe 2; caudal $1\frac{1}{6}$, lunate, lobes sharply pointed; least depth of caudal peduncle 7; ventral $2\frac{3}{5}$; pectoral $3\frac{1}{8}$ in fish without caudal.

Silvery, darker above, indistinctly marbled with dusky along back. Dorsal with dusky margin. Pectoral base colored on posterior side, upper half brownish black, lower dead white. (Snyder.)

Hawaii. Only known from the type, which I have been unable to locate in the U. S. National Museum. This species is very close to if not synonymous

1944

with Hymnis hopkinsi Jordan,
based on a smaller example
but 660 mm long in the eastern
Pacific near Mazatlan, Mexico.
No structural characters are
apparent for distinction.

U. S. N. M., No. 50874. Honolulu,
Bureau of Fisheries.
Length 9.65 mm. Type of
Carangoides ax.

23816, 23817, 23831, 23832. Pandanow
Island, between Cebu and Bohol.

March 23, 1909. Length 73 to 80 mm.

23274. Port Palapay. June 2, 1909.
Length 93 mm.

14598. Port Palapay. June 3, 1909.
Length 105 mm.

1 example. Rasa Island, Mantaguin
Bay, Palawan. April 1, 1909. Length 50 mm.

23188. Romblon. March 26, 1908.
Length 88 mm.

23342 and 23343. Romblon Harbor.
March 25, 1908. Length 72 to 90 mm.

15778 and 15779. Sacol Island, east
of Zamboanga. September 9, 1909. Length
58 to 72 mm.

23207 to 23210. South Lagoon, Tournindao
Island. February 26, 1908. Length 77 to 95 mm.

18783. Tictawan Island, east of
Zamboanga. September 8, 1909. Length 65 mm.

1945

Genus Ulua Jordan and Snyder

Ulua Jordan and Snyder, Mem.
Carnegie Mus., vol. 4, no. 4, p. 39,
April 1, 1908. (Type Caranx ^{richardsoni} ~~undulatus~~
~~undulatus~~ Jordan and Snyder,
orthotypic.)

Body greatly compressed, profiles
angular. Head moderate. Eye
small. Lower jaw protrudes.
About 50 to 55 long lower gill
rakers, feather like in shape
and projecting into the mouth on
each side of the tongue. Breast
naked to pectorals and ventrals.
Soft dorsal and anal with long
pointed anterior lobes. Caudal
long. Pectoral long, falcate.
One species.

1342

66070 U.S.N.M. Suva, Fiji.
Albatross Collection 1899-1900. Length
210 mm.

71679 U.S.N.M. Kafa, Okinawa, Riu
Kiu. Albatross Collection 1906. Length
125 to 191 mm. 4 examples.

72243 U.S.N.M. Iloilo. R.C. Mac
Gregor. Length 100 mm.

72693 U.S.N.M. Java. Bryant and
Palmer. Length 94 mm.

85983 U.S.N.M. China. A. de C
Sowerby. Length 87 mm.

89845 U.S.N.M. Tahiti. J.M. Clements.
Length 127 to 131 mm. 2 examples.

47508 to 47511 A.N.S.P. Philippine
Islands. Commercial Museum of Philadelphia.
Length 120 to 180 mm. Types of Upeneoides
philippinus.

Alua mandibularis (Macleay)

Caranx mandibularis Macleay,
Proc. Linn. Soc. New South Wales,
vol. 7, p. 356, 1882 (type locality,
New Guinea).

Carangoides mandibularis Fowler
and Bean, Proc. U. S. Nat. Mus.,
vol. ~~72~~ 62, art. 2, p. 1922, p.
20 (Tubao; Sumatra material).
— Fowler, Proc. Acad. Nat. Sci.
Philadelphia, vol. 79, 1927, p.
272 (Philippines); Mem. Bishop
Mus., vol. 10, p. 151, 1928 (New
Guinea).

1247

9202, 20545 to 20547. Tilig,
Lubang Island. July 14, 1908. Length
78 to ~~210~~ mm. 16 examples.

1 example. Varadero Bay, Mindoro.
July 23, 1908. Length 77 mm?

21265. Tifu Bay, Boero Island,
Dutch East Indies. December 10, 1909.
Length 87 mm.

22586. Kemar, Celebes. November 13, 1909.
Length 123 mm.

52200 U. S. N. M. Apia, Bureau of
Fisheries. Length 98 to 148 mm. 4 examples.

55988 U. S. N. M. Rio Grande, Mindanao.
Bureau of Fisheries (no. 4226) 1906. Length 270 mm?

56270 U. S. N. M. Mindanao, Bureau
of Fisheries (no. 4267). Length 115 mm?

57922 U. S. N. M. Zamboanga. Dr. E. A.
Mearns. Length 105 mm.

58046 U. S. N. M. Zamboanga. Dr. E. A.
Mearns. Length 200 to 209 mm. 2 examples.

1947

Ulua mandibularis McCulloch,

Mem. Queensland Mus., vol. 8, pt. 1,
p. 75, pl. 14, January 30, 1924

(types from near Port Moresby);

— Fowler, Mem. Bishop Mus.,
vol. 11, no. 6, p. 405, 1934 (New Guinea).

~~McCulloch~~, Austral. Mus. Mem.,
no. 5, pt. 2, p. 190, Sep. 10, 1929

(reference). — Weber and Beaufort,

Fishes Indo Austral. Arch., vol.

6, p. 266, fig. 51, fig. 52 (mouth),
1931 (Balikpapan).

1366
71812 U.S.N.M. Haha, Okinawa,
Riu Kiu. Albatross Collection 1906.

Length 293 mm.

72237 U.S.N.M. Cujin Island.
R. C. Mac Gregor. Length 75 to 125 mm.

72695 U.S.N.M. Java. Bryant
and Palmer. Length 245 mm.

84219 U.S.N.M. Cebu. Dr. Fred
Baker. Length 125 mm.

84229 U.S.N.M. Zamboanga.
Dr. Fred Baker. Length 233 mm.

85992 U.S.N.M. China. A. de C
Sowerby. Length 41 to 90 mm. 4 examples,
in very poor preservation.

87059 U.S.N.M. Foochow. A. de C
Sowerby. Length 54 to 90 mm. 2 examples,
in poor preservation.

52883 A.N.S.P. Hong Kong, China. Henry
W. Fowler. 1929. Length 168 mm.

Caranx plumbeus (not Duoy and
Gaimard), Jordan and Seale,
 Bull. Bur. Fisher., vol. 26, p. 14,
 1906 (1907) (Cavite).

Ulua richardsoni Jordan and
Snyder, Mem. Carnegie Mus.,
 vol. 4, no. 2, p. 39, pl. 53, ^{April 1,} 1908
 (type locality, Takao, Formosa;
 Cavite material). — Wakaya,
 Ann. Carnegie Mus., vol. 15, p. 210,
 1924 (type and paratype). —
Oshima, Philippine Journ. Sci.,
 vol. 26, no. 3, p. 405, March 1925
 (Toko, Formosa).

1537

6029 and 6030. Hinunangan
Beach, Leyte. July 30, 1909. Length
105 to 120 mm.

19389. Iloilo market. March 28, 1908.
Length 80 mm.

21164 to 21166. Iloilo market. February 11,
1908. Length 82 to 91 mm.

1 example. Lampinigan Island.
September 11, 1901. Length 48 mm.

19610. Mangalay, Mindoro. June 4,
1908. Length 78 to 85 mm. 6 examples.

11676. Mariveles Bay, Luzon. January
30, 1909. Length 135 mm?

1 example. Noto River, Lagonoy Gulf, Luzon.
June 18, 1909. Length 95 mm.

1 example. D. 5152. Pajumajan Island
(W.), S. 2° W., 2 miles ($5^{\circ} 22' 55''$ N., 120°
 $15' 45''$ E.), Tawi Tawi Group. February
18, 1908. Length 61 mm.

Depth $1\frac{2}{3}$ to $2\frac{1}{2}$; head $2\frac{4}{5}$ to $4\frac{1}{4}$,
 width $2\frac{1}{4}$ to $2\frac{4}{5}$. Snout $3\frac{1}{5}$ to
 $3\frac{4}{5}$ in head from snout tip;
 eye $2\frac{3}{4}$ to $6\frac{4}{8}$, $1\frac{1}{8}$ to $2\frac{2}{5}$ in snout,
~~equal~~ ^{1 to $2\frac{5}{5}$ in} interorbital, without
 adipose lids; maxillary reaches
 $\frac{1}{4}$ to $\frac{4}{5}$ in eye, expansion $2\frac{1}{5}$ to
 $2\frac{3}{4}$ in eye, length 2 to $2\frac{1}{4}$ in
 head from snout tip;
 interorbital $3\frac{1}{3}$ to 4, convexly
 elevated. Gill rakers 20 to 25
 + ⁵48 to 58, little longer than
 to equal to gill filaments or $1\frac{1}{4}$ in eye.
 Scutes 38 to 40, of which
 last 6 on caudal base. Arch
 of lateral line $1\frac{1}{6}$ in straight
 section, ^{20 above arch to soft dorsal origin, 34 below.}
 Breast and chest
 naked to pectoral and ventral
 ventral bases, ^{to half way back in depressed} scales with

22 to 25 vertical, parallel, confluent stripes. Scales all small in upper side of back, larger on tail, especially below. All fins with dense, small, close set scales.

D. I, VIII — I, 21, I, 20, I, 1 third

erect spine $2\frac{3}{4}$ to $3\frac{4}{4}$ in total head length, first ray 2,

with age reaching caudal origin ^{fork of caudal}, $1\frac{3}{4}$ in fish without caudal base; A. II — I, 16, I or I, 17, I,

first ray 1 to $1\frac{3}{4}$ in total head, caudal 1 to $1\frac{1}{6}$, forked; least depth of

caudal peduncle 5 to $6\frac{1}{2}$,

pectoral $1\frac{1}{5}$; ventral with age $2\frac{1}{3}$ to $2\frac{3}{4}$ in fish without caudal, rays II, 18; ventral rays I, 5, fin $1\frac{2}{5}$ to $3\frac{1}{3}$ in ^{total} head.

Back drab-gray, sides and below silvery white.

Six transverse slightly darker leaden gray bands on back much broader than interspaces.

Iris whitish. No dark spot on opercle. Spinous dorsal dusky, other fins pale, lower ones whitish. Black blotch in pectoral axil.

East Indies, Philippines, Formosa. Alua richardsonii was based on a specimen 450 mm long. Atkinson's figure, as reproduced by Jordan and Snyder, shows the scales as differing from my example, apparently smaller below lateral line than those above it, besides showing their courses too regular. In my largest example the dorsal and anal basal scaly sheaths are made up of small scales, like those on the body, there are about 10

1952

rows of scales on the cheek below the eye towards the base of the preopercle and there are far more postocular scales.

Atkinson has also apparently neglected to indicate the minute crowded scales covering most all the fins, more or less basally, which are also equally developed on small examples.

1953

9321. ~~Palau~~ Cebu market.

August 17, 1909. Length 329 mm.

9366. Cebu market. August
25, 1909. Length 407 mm.11602. Manila market. March
16, 1908. Length 182 mm.10717. Manila market. July
10, 1908. Length 163 mm.A598. Gandra Island. September
20, 1909. Length 850 mm.

Cme¹⁷⁹

Pseudupeneus bilineatus (Valenciennes)

Upeneus bilineatus Valenciennes, Hist. Nat. Poiss., vol. 7, 1831, p. 525. Amboina. $\frac{1}{2}$

Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 411 (compiled). $\frac{1}{2}$ Fowler, Bull.

Bishop Mus., No. 38, 1927, p. 17, fig. 2 (Palmyra Island); Mem. Bishop Mus., vol. 10, 1928, p. 233, fig. 47 (Palmyra example).

Parupeneus bilineatus Bleeker, Nederl. Tijdschr. Dierk., vol. 2, 1865, p. 281 (name only); Verhandl. Kon. Akad. Wetensch. Amsterdam, vol. 15, no. 3, 1875, p. 38 (compiled).

U. S. N. M., No. 30512. New
Guinea. Australian Museum.
Length 275 mm?

U. S. N. M., No. 76614. Takao.
Dr. Fred Baker. Length 212
mm.

A. N. S. P., one example. Philippines.
1923. Rev. Joseph Clemens.
Purchased. Length 62 mm.

Genus Atropus Oken

Atropus Oken, Isis, p. 1782, 1817
 (on Les atropus Cuvier, Règne Animal,
 vol. 2, p. 334, 1817, type Brama
atropus Schneider, monotypic).
 (Atropus Leach 1815 in orthoptera not involved.)

Body ovate, strongly compressed.
 Head moderate, upper profile strongly
 convex. Snout short. Eye rather
 small, advanced in head. Maxillary
 reaches below eye, expanded
 behind. Teeth in jaws in villiform
 bands, in lower jaw posteriorly
 reduced to single row. Triangular
 patch on vomer, on palatines and
 middle of tongue in narrow band.
 Scales small, wanting on breast,

15506 and 15508. Caracaran, Batan

Island. June 8, 1901. Length 100 to 103 mm.

[1439.] Head pearl gray, with orange brown shades. Pair of dark streaks across interorbital continuing more or less brokenly into pale line running either side of dorsal base, interlacing more or less across top of opercle. Dusky blotch on opercle not distinct. Round black blotch at lateral line. Chin and throat dusky. First dorsal spines more or less silvery, membranes slightly olivaceous. Second dorsal very pale olive, with 2 irregular darker subbasal bands. Caudal pale, membranes

1956

naked area extending to pectoral base and beyond base of ventrals. Cheek, opercle and preopercle above scaly, rest of head naked. Lateral line strongly arched, becomes straight below fourth or fifth dorsal ray; arch more than $1\frac{1}{2}$ times shorter than straight section which rather weakly armed with scales, last 30 to 35 widest, begin below last fourth of soft dorsal. Between ventral and anal origins deep rectilinear longitudinal groove, contains vent, 2 preanal spines and receives ventrals, which subequal with head. First dorsal and anal ray not filamentous, middle rays in old males prolonged, slightly so in females.

One species.

Atropus atropus (Schneider)

Brama atropus Schneider, Syst.
Ichth. Bloch, p. 98, 1801 (type
locality, Tranquebar).

Brama atropus Schneider, Syst.
Ichth. Bloch, pl. 23, 1801.

Olistus atropus Cuvier, Hist. Nat.
Poiss., vol. 9, p. 141, 1833 (Tranquebar;
Malabar).

11478

Otolithus leuciscus Günther, Ann.
Mag. Nat. Hist., London, series 4, vol. 10,
1872, p. 398. Manila Bay, Philippines.
+ Meyer, An. Soc. Españ. Hist. Nat.
Madrid, vol. 14, 1885, p. 23 (Manila
Bay). Elera, Cat. Fauna Filipinas,
vol. 1, 1895, p. 503 (Luzon, Manila Bay).

Corvina belangerii ~~Belangerii~~ (not Valenciennes) Evermann and Seale,
Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 87 (San Fabian).

Depth 3 to $3\frac{1}{2}$; head $2\frac{7}{8}$ to $3\frac{1}{10}$,
width $1\frac{7}{8}$ to 2. Snout $3\frac{1}{3}$ to $3\frac{1}{2}$ in
head; eye $3\frac{7}{8}$ to $5\frac{2}{5}$, $1\frac{1}{4}$ to $1\frac{1}{2}$ in
snout, $1\frac{1}{3}$ to $1\frac{1}{2}$ in interorbital;
maxillary reaches $\frac{1}{2}$ to $\frac{4}{5}$ in eye,
expansion $1\frac{1}{8}$ to $1\frac{3}{4}$ in eye, length

Caranx atropus Cantor, Journ. Asiatic
Soc. Bengal, vol. 18, pt. 2, p. 1112,
1849 (1850) (Pinang Sea).

— Günther, Cat. Fish. Brit. Mus., vol. 2,
p. 450, 1860 (China; Madras; Pinang
Sea; And Heals; India; East Indies).

— Day, Fishes of Malabar, p. 88, 1865;
Fishes of India, pt. 2, p. 221, 1876.

— Day, Fauna British India, Fishes,
vol. 2, p. 162, 1889.

more or less swarthy. Eye light brown
to darker or neutral gray. Pale
gray white median line on snout
above, forks at interorbital with
each branch continued close along
profile of back to caudal peduncle above.
Outside usually deep brown line passes
from snout above, above eye and along
upper side of back above lateral
line. Obscure deep brown lateral band
from snout tip to eye, bounded below
on snout by white line, rather obsolete
or indistinct on side of body. Round
black spot at caudal base medially
size of pupil. Fins all more or less
dull brown, spinous dorsal darkest;

~~Caranx atropox~~

— Elera, Cat. Fauna Filipinas, vol. 1,
p. 511, 1895 (Manila; Luzon).

— Jordan and Seale, Proc. Davenport
Acad. Sci., vol. 10, p. 7, 1905 (Hong Kong).

— Bean and Weed, Proc. U. S. Nat.
Mus., vol. 42, p. 599, 1912 (Batavia).

Caranx atropox Fowler and Bean,
Proc. U. S. Nat. Mus., vol. 62, art. 2,
1922, p. 21. (Sumatran material;
not Takao specimen).

Sciaena unius Day, Fishes of India,
pt. 2, 1876, p. 187, pl. 45, fig. 5 (Batavia,
Bombay, Andamans, Madras); Fauna
British India, vol. 2, 1887, p. 119. $\frac{1}{m}$

Lloyd, Records Indian Mus., vol. 1, 1907,
p. 226 (Akyab). $\frac{1}{m}$ Seale, Philippine

Journ. Sci., vol. 9, no. 1, 1914, p. 69 (Hong
Kong). $\frac{1}{m}$ Pearson, Ceylon Administr. Rep., 1915-18, pp.

F10 - F14. $\frac{1}{m}$ Malpas, Ceylon Administr. Rep., 1921, p. E5.
Pseudosciaena unius Bleeker, Atlas

Schth. Ind. Néerland., vol. 9, 1877, pl.
(2) 385, fig. 2.

Pseudosciaena anea Jordan and Seale,
Bull. Bureau Fisher., vol. 26, 1906 (1907),
p. 25 (Cavite). $\frac{1}{m}$ Jordan and Richardson,

Bull. Bureau Fisher., vol. 27, 1907 (1908),
p. 261 (Manila). $\frac{1}{m}$ Seale, Philippine Journ.
Sci., vol. 5, no. 4, Oct. 1910, p. 280 (Sandakan,
Borneo).

Carangoides atropus Bleeker, Nat.
Tijds. ned. Indie, vol. 1, p. 366, 1850
(Batavia, Surobaja, Banjuwangi);
vol. 3, p. 53, 1852 (Singapore); Verh.
Batavia. Genoot. (Nakreel), vol.
24, p. 66, 1852 (Javan localities);
Nat. Tijds. ned. Indie, vol. 7, p. 312,
1854 (Bantem); vol. 9, p. 394, 1855
(north Pasuruan); vol. 16, p. 407,
1858 (Japara, Java).

1077

Corvina sina (not Cuare), Schlegel,
Fauna Japonica, Poiss., pts. 2-4, 1853,
p. 58, pl. 24, fig. 2.

? Johnius resplendens Humbon and
Jacquinet, Voyage Astrakane, Zool.,
vol. 3, 1853, p. 45, pl. 5, fig. 1. no
locality.

Citula atropus Bleeker, Ned. Tijds.
dierk., vol. 2, p. 174, 1865 (Siam).

— Fowler, Proc. Acad. Nat. Sci.

Philadelphia, vol. 86, 1934, p. 450

(Durban, Natal).

— Jordan and Starks, Ann. Carnegie
Mus., vol. 11, p. 443, 1917 (Ceylon).

Citula atropus ~~Fowler~~ Journ. Bombay
Nat. Hist. Soc., vol. 33, no. 1, p. 110,
September 30, 1928 (~~Bombay~~^{Bombay}).

Fowler, Journ. Acad. Nat. Sci. Philadelphia,
ser. 2, vol. 12, p. 513, pl. 14, lower figure
to left, June 10, 1904 (Pudung); Proc.
Acad. Nat. Sci. Philadelphia, vol.
57, p. 499, July 1905 (Baram, Borneo).

Otolithus macrophthalmus Bleeker,
Natuurkund. Tijdschr. Nederl. Indië,
vol. 1, 1850, p. 99. Batavia, Bantam,
Amarang, Samarang.

Sciaen macrophthalmus Günther, Cat.
Fishes Brit. Mus., vol. 2, 1860, p. 291
(compiled). ¹/_m Karoli, Termész. Füzetek,
Budapest, vol. 5, 1881, p. 159 (Celebes).

Corvina macrophthalmus Bleeker, Verslagen
Kon. Akad. Wetensch. Amsterdam, series 2,
vol. 2, 1868, p. 292 (Bintan).

Pseudosciaena macrophthalmus Bleeker,
Verhandel. Kon. Akad. Wetensch.
Amsterdam, vol. 14, series 3, 1874, p. 21
(Singapore, Binting, Banka, Java,
Celebes).

1962

Atropus atropus Wakuiya, Ann.

Carnegie Mus., vol. 15, p. 211, pl. 32,
figs. 1-3, 1924 (Formosa). —

Weber and Beaufort, Fishes Indo
Austral. Archip., vol. 6, p. 202, fig.
42, 1931 (Bayan Api Api; Batavia).

2 above, 6 below, 4 predorsal, 2 rows
on cheek. Tubes in lateral line simple,
well exposed, large, each with well
developed basal scale. ^{scales with} 11 to 13 basal
radiating striae; 82 to 114 apical denticles
with 3 to 5 transverse series of basal
elements; ~~and~~ circuli fine.

D. VI - I, 9, I, third spine 2 to $2\frac{1}{8}$ in
total head length, first branched ray
 $1\frac{3}{5}$ to $1\frac{2}{3}$; A. II, 8, I, second spine
 $2\frac{7}{8}$ to $3\frac{3}{5}$, first branched ray $1\frac{7}{8}$ to
 $2\frac{1}{4}$; caudal $1\frac{1}{3}$ to $1\frac{2}{5}$, little emarginate
behind; least depth of caudal peduncle
 $2\frac{2}{5}$ to $2\frac{3}{5}$; pectoral $1\frac{1}{5}$ to $1\frac{7}{8}$;
ventral $1\frac{4}{5}$ to $1\frac{7}{8}$.

Brown generally, head often

Atropus atropus Fowler, Proc.
Acad. Nat. Sci. Philadelphia,
vol. 86, 1934, p. 150 (Bangkok);
Mem. Bishop Mus., vol. 11, no. 6,
1934, p. 405 (note); Proc. Acad.
Nat. Sci. Philadelphia, vol. 87, p.
142, 1935 (Bangkok; Sriracha;
Paknam).

Case 79

11694

Johnius aneus Bloch

Johnius aneus Bloch, naturgesch.

Indon. Fische, vol. 7, 1793, p. 135,

pl. 357. Malabar. $\frac{1}{2}$ Schneider, Syst.

Ichth. Bloch, 1801, p. 74 (Tranguebar).

Johnius aneus Fowler, Journ. Bombay

Nat. Hist. Soc., vol. 30, no. 4, November

1926, p. 8⁷⁷⁷ (Bombay); Proc. Acad. Nat.

Sci. Philadelphia, 1927, p. 285

(Philippines). (Error.)

Labrus aneus Lacépède, Hist. Nat. Poiss.,

vol. 3, 1802, pp. 447, 517 (on Bloch).

Corvina anei Cuvier, Hist. Nat. Poiss.,

vol. 5, 1830, p. 131 (on Bloch).

Atolithus aneus Day, Proc. Zool. Soc.

London, 1867, p. 739 (Madras);

1870, p. 684 (Andaman).

Caranx nigripes Cuvier, Hist. Nat.
Paris, vol. 9, p. 122, 1833 (type
locality, Pondicherry).

— Bleeker, Verh. Batavia. Genoot.
(Bali), vol. 22, p. 3, 1849 (west
coast of Bali); (Madura), vol. 22,
p. 4, 1849 (Sumanap).

Nat. Geneesk. Arch. Ned. Indie, vol.
2, p. 517, 1845 (Batavia). — Richardson, Deutch. China and Japan, p. 275, 1846 (China Sea). — Contor,

Journ. Asiatic. Soc. Bengal, vol. 18,
pt. 2, p. 111, 1849 (1850) (Peking Sea;
Malay Peninsula; Singapore).

— Jerdon, Madras Journ. Nat. Sci., p. 137, 1851.

— Kner, Reise Novara, Fische, p. 159,
1865 (Jawa).

1193

to say it reaches 1525 mm. and enters
tidal waters. My examples are much
more coarsely spotted than in Bleeker's
figure of Pseudosciaena diacanthus.

8 examples. A. N. S. P. Bombay.
Bombay Natural History Society. Length
190 to 250 mm.

1 example. A. N. S. P. Bombay.
Prof. F. Hallberg. Length 308 mm.

1965

Caranx longipes Steindachner,
Sitzs. Ber. Akad. Wiss. Wien,
math.-naturw. Kl., vol. 115, pt. 1,
p. 1404, 1904 (type locality, Upolu,
Samoa). — Fowler, Mem. Bishop
Mus., vol. 10, p. 140, 1928 (reference).

1472

Scales with 12 to 14 basal striae; 42 to 50 apical denticles, with 7 or 8 series of transverse basal elements; circuli very fine.

D. XI, 21, I or 23, I, third spine $2\frac{1}{5}$ to $2\frac{2}{5}$ in head, first ray $3\frac{3}{5}$; A. II, 7, I, second spine $2\frac{1}{4}$ to $3\frac{1}{10}$, first ray 2 to $2\frac{1}{2}$; caudal $1\frac{2}{5}$ to $1\frac{1}{2}$, obtuse behind; least depth of caudal peduncle $3\frac{1}{4}$ to $3\frac{7}{8}$; pectoral $1\frac{3}{5}$ to $1\frac{7}{10}$; ventral $1\frac{3}{4}$ to $1\frac{7}{8}$.

Voiled dark gray generally. Four slightly deeper broad bands on back, within each 2 or 3 series of deep dusky blotches size of pupil. Iris yellowish. Dorsals pale, with 5 or 6 blackish blotches. Caudal similar, only blotches as 3 or 4 transverse irregular rows. Ventral neutral dusky. Paired fins same.

India, Ceylon, Burma, Malayan Peninsula, East Indies, Philippines, China. According

1966

Depth $1\frac{4}{5}$ to $1\frac{7}{8}$; head $3\frac{2}{5}$ to $3\frac{1}{2}$, width 2 to $2\frac{1}{8}$. Snout $3\frac{1}{2}$ to 4 in head from snout tip; eye $3\frac{3}{4}$ to 4, greater than snout in young to subequal with age, $1\frac{1}{5}$ to $1\frac{1}{3}$ in interorbital; maxillary reaches $\frac{1}{4}$ to $\frac{1}{3}$ in eye, expansion 2 to $2\frac{1}{4}$ in eye, length 2 to $2\frac{1}{4}$ in head from snout tip; interorbital $3\frac{1}{4}$ to $3\frac{2}{5}$, elevated convexly with strong median keel to spinous dorsal. Gill rakers 12 + 20, lanceolate, $1\frac{1}{8}$ in gill filaments or $1\frac{2}{5}$ to $1\frac{7}{8}$ in eye.

Scales 34 + 36 or 37 in lateral line, arch $1\frac{2}{5}$ to $1\frac{1}{2}$ in straight section; 18 scales above arch of lateral line, 33 below; predorsal

with median naked strip entire extent; breast and chest broadly naked to pectoral and ventral bases. Scales with 45 to 48 + 50 to 63 vertical parallel striae.

D. I, VIII - I, I, 21, I to I, I, 24, I, third erect spine $2\frac{1}{2}$ to $2\frac{3}{4}$ in total head length, first branched ray $1\frac{2}{3}$ to $1\frac{3}{4}$; A. II - I, I, 18, I or I, I, 19, I; first branched ray $1\frac{4}{5}$ to $1\frac{7}{8}$; least depth of caudal peduncle 5 to $5\frac{1}{2}$; caudal $3\frac{1}{3}$ to $3\frac{1}{2}$ rest of fish, forked; pectoral $2\frac{2}{3}$, $1\frac{2}{5}$ in head in young, falcate, rays II, 16; ventral $3\frac{2}{5}$ to $3\frac{1}{2}$ in fish without caudal; vent midway, in median abdominal groove, in length of depressed ventral.

1968

Back olive brown, paler to
whitish below. Iris gray.
Dorsal and caudal pale brown,
with spinous fin, soft dorsal
edge above and stripe along
each ray dotted with gray to
dusky. Ventral neutral black.
Anal and pectoral whitish.

India, Ceylon, Siam, Malaya,
East Indies, Philippines, Formosa,
China, Polynesia.

Eleven examples. Bulayan Bay,
Luzon. January 17, 1908. Length
108 to 138 mm.

4342. D. 5497. Pantique Island,
N. 64° W., 10 miles (lat. 9° 07' 15" N.,
long. 124° 59' 30" E.), between Leyte
and Mindanao. In 960 fathoms.
August 3, 1909. Length 50 mm.

Seven examples. Davao,
Mindanao. May 16, 1908. Length
98 to 122 mm.

11601, ~~11907~~. Manila market.
March 16, 1908. Length 73 mm.

11907. Manila market.
December 12 to 18, 1908. Length 49
mm.

5604. Tuloan market.
July 25, 1909. Length 80 mm.

~~11463~~

~~1504~~
Spinous dorsal margined with dusky.
Anal and ventral broadly bordered
white below. Length 175 mm. (Bleeker.)

Only known from Sumatra, Malayan
Peninsula and Borneo. Bleeker calls
attention to the scales on the front and
abdomen, not only ciliated, but
their roughness also apparent in
profile, also the shape of the dorsal.

11463. Kowloon, China. September 8, 1908. Length 104 mm.

U. S. N. M., No. 86504. China.
A. de C. Sowerby. Length 50 mm.
D. VIII, I, 21; A. II - I, 18.

entire (at least in figure).

Scales 60 along above lateral line, 30 along below; 11 above (9 above anal origin in figure; 38 predorsal to front of snout tip). Scales cycloid except on front above and abdomen where strongly ciliated; soft vertical fins finely scaled over greater portions basally.

D. X, I, 22 to 25, fourth and fifth spines subequally longest or 3 in head, first ray $3\frac{1}{8}$, fourteenth ray $2\frac{2}{3}$; A. II, 8 or 9, second spine $4\frac{1}{8}$, or $2\frac{2}{5}$ in postocular; caudal $1\frac{3}{4}$ in head, cuneate, ends rather broadly in median point behind; least depth of caudal peduncle $3\frac{3}{5}$; pectoral $1\frac{3}{5}$; ventral $2\frac{1}{3}$.

Above bluish or greenish gray, sides and below silver. Iris yellowish, above brownish. Opercle with diffuse bluish blotch above. Fins yellow.

1971

U.S.N.M., No. 85876. China.
 A. Sowerby. Length 75 to 95 mm.
 Twelve examples.

U.S.N.M., No. 86504. China.
 A. de C. Sowerby. Length 50 mm.
D. VIII I, 21; A. II I, 18.

A.N.S.P., one example. Bombay.
 1925. Prof. F. Hallberg. Purchased.
 Length 217 mm.

One genus, represented in southern Australian and New Zealand seas. Unaberrant percoid family, known chiefly by their ~~poor~~ feeble dentition and fin spines.

Genus Arripis Jenyns

Arripis Jenyns, Zool. Voyage Beagle^{Fish.}, vol. 4, 1840, p. 13. Type Centropristes

georgianus ^{Valenciennes} ~~monotypic~~, monotypic.

Mulloid^(Volander)es, Richardson, Rep. Twelfth

Meet. Brit. Assoc. Adv. Sci., 1842 (1843),

p. 16. Type Centropristes (Mulloides)

rapidissimus (Volander) Richardson =

Sciæna trutta Schneider, monotypic.

(Precludes Mulloides Bleeker 1849 in Mullidae.)

Genus Caesiomorus Lacépède

Caesiomorus Lacépède, Hist. Nat. Poiss., vol. 3, p. 92, 1802. (Type Caesiomorus bailloni Lacépède, designated by Jordan and Evermann, Genera of Fishes, pt. 1, p. 61, 1917.)

Glaucus Klein, Neuer Schauplatz, vol. 1, p. 829, 1775. Species non-binomial. (Type Scomber glaucus Linnaeus, tautotypic.) (Inadmissible.)

Hipodys Rafinesque, Carrat. Mus. Animal. Sicil., p. 41, 1810. Type. (Type Scomber glaucus Linnaeus.)

Hypodys Jordan and Evermann, Genera of Fishes, pt. 1, p. 79, 1917. (Type Scomber glaucus Linnaeus.)

Genus Upeneus Cuvier (part 30)

Upeneus Cuvier, Hist. Nat. Poiss., vol. 3, 1829, p. 448. Type Mullus vittatus Forsskal, designated by Bleeker, Arch. Néerl. Sci. Nat. Harlem, vol. 11, 1876, p. 333.

Hypeneus Agassiz, Monencl. Zool. Index, 1846, p. 190. Type Mullus vittatus Forsskal. Corrected orthography.

Upeneoides Bleeker, Verhandl. Batavia. Genootsch. (Percoid.), vol. 22, 1849, pp. 62, 63. Type Mullus vittatus Forsskal, designated by Jordan, Genera of Fishes, pt. 2, 1919, p. 240.

Hypeneoides Ogilby, Cat. Fishes New South Wales, 1886, p. 17. Type Mullus vittatus Forsskal. Corrected orthography.

Megalepis Bianconi, Recond. Acad. Sci. Bologna, 1854-57 (1857), p. 100. Type Megalepis alexandrinii Bianconi, monotypic.

Baillonus Rafinesque, Analise
de la nature, p. 85, 1815. (Type
Caesiomorus bailloni Lacépède,
 virtually, as Baillonus Rafinesque
 proposed to replace Caesiomorus
Lacépède.)

Campogramma Regan, Ann. Mag.
Nat. Hist., ser. 7, vol. 12, p. 350,
 1903. (Type Centronotus radiatus,
 not Lacépède, Risso = Scomber
glauca Linnaeus, monotypic.)

a greatly larger pair of barbels, these reaching the ventral origin. Evermann and Seal mention short barbels and the uniform yellow color of their specimen. At present there is no trace whatever of any blue lines on the head or bands on the soft vertical fins.

56131 U. S. N. M. Photo. Bureau of Fisheries (4141). Length 187 mm. Sex Pseudupeneus luteus.

Body well compressed, fusiform. Head moderate, compressed, forehead not prominent. Snout conic. Eye little advanced in head. Mouth cleft moderate, oblique, jaws even. Maxillary reaches below eye. Teeth uniserial, rather strong, conic in jaws, on vomer and palatines. Nostrils small, together, midway in snout. Lower gill rakers 28 to 31. No pseudobranchiae. Branchiostegals 8 or 9. Air vessel bifurcate posteriorly. Pyloric appendages moderate. Scales minute, rounded. Lateral line forms long even curve anteriorly, straight posteriorly. Two dorsals, first with procumbent spine 5 or 6 erect

spines. Anal spines as 2 advanced,
separated from soft fin. Soft
dorsal and anal opposite, similar.
Caudal deeply forked. Pectoral
short, falcate. Ventral short.

One species in the eastern
Atlantic.

Cassimorus glaucus (Linnaeus)

Xcumber glaucus Linnaeus, Syst.

Nat., ed. 10, pt. 1, p. 298, 1758

(type locality, Ascension Island).

— Isbeek, Reise Ost Ind. China, p. 387,

1765 (Ascension Island). — Linnaeus,

Syst. Nat., ed. 12, pt. 1, p. 494, 1766. —

Bonnaterre, Tabl. Ich., p. 141, 1788

(copied). — Gmelin, Syst. Nat., pt. 1, p.

1332, 1789 (copied). — Walbaum, Arted. Pisc.,

vol. 3, p. 212, 1792 (copied). — Schneider, Syst. Ichth. Bloch,

Lichia glaucus Valenciennes, Hist. Nat.

Nat. Canaries, Poiss., vol. 2, pt. 2,

p. 56, pl. 3, fig. 1, 1836-44

(Canaries).

Depth 3 to $3\frac{1}{5}$; head $3\frac{1}{5}$ to $3\frac{1}{4}$, width $1\frac{3}{4}$ to $1\frac{4}{5}$. Snout $1\frac{7}{8}$ to 2 in head; eye 4 to $5\frac{2}{5}$, $2\frac{1}{4}$ to $2\frac{7}{8}$ in snout, $1\frac{1}{4}$ to $1\frac{7}{8}$ in interorbital; maxillary reaches $\frac{4}{5}$ to $\frac{7}{8}$ in snout, expansion 1 to $1\frac{1}{8}$ in eye, length $2\frac{2}{5}$ to $2\frac{4}{5}$ in head; barbels reaches opposite hind eye edge, length $1\frac{3}{5}$ to $1\frac{4}{5}$ in head; teeth moderately large, conic, short, uniserial in jaws, none on palatine; interorbital 3 to $3\frac{1}{4}$, convexly elevated. Gill rakers 9+30, lanceolate, slightly greater than gill filaments or $1\frac{1}{8}$ in eye.

Scales 28 in lateral line to caudal base and 2 or 3 more on latter; 3 above, 6 or 7 below, 13 predorsal forward not quite to nostrils; 3 rows below eye to lower preopercle edge.

⁷⁴
Trachynotus glaucus Regan, Ann.
 Mag. Nat. Hist., ser. 7, vol. 12, p.
 349, Sep. 1903 (reference). —

Barnard, Ann. South African Mus.,
 vol. 21, pt. 2, p. 553, Oct. 1927 (Cape Fear,
 Algoa Bay).

Glaucus glaucus Jordan and Hubbs,
 Ann. Carnegie Mus., vol. 11, nos. 3-4,
 p. 463, Nov. 5, 1917 (Port Said, Egypt).

Caesiomorus glaucus Fowler, Proc.

~~Acad. Nat. Sci. Philadelphia, vol.~~
~~15, p. 199, U. S. Nat. Mus., vol. 56, p. 199.~~
 1919.

224
18907. Tulinatan Island, east
of Zamboanga. September 9, 1907.
Length 97 mm.

23277. Tuta Bay, Zolo Island, first
anchorage. September 19, 1907. Length 57 to
112 mm. 7 examples.

15541. Rita Island, Uluayan Bay, Palawan Island, December 4, 1907. ^{Length 103 mm.} 1

10411. Varadero Bay, Verde Island,
vicinity southern Luzon. July 22, 1908
Length 100 mm.

19050. Varadero Bay. July 23, 1908.
Length 93 mm.

6433. West coast of Palani Island,
off northern Luzon. November 18, 1908.
Length 95 mm.

Scomber culcar Bloch, Naturg.
ausland. Fische, vol. 7, p. 55,
 pl. 336, fig. 2, 1793 (type locality,
 Accara, Guinea).

Lichia tetracantha Bowdich,
Excurs. Madeira, p. 237, fig. 49,
 1825 (type locality, St. Jago;
 Gambia).

Temnodon vadigo (not Lacépède)
Lowe, Proc. Zool. Soc. London,
 p. 248, 1850 (Madeira).

1168

(1907), p. 88 (Bacon). L. Kendall
and Goldsborough, mem. Mus. Comp.
Zool., vol. 26, 1911, p. 293 (Papeete, Tahiti).
Upeneus semifasciatus Macleay, Proc.
Linn. Soc. New South Wales, vol. 8, 1883,
p. 263. Hood Bay, New Guinea.
Parupeneus andrewsi Regan, Proc. Zool.
Soc. London, 1909, pt. 1, p. 403, pl. 65.
Christmas Island, Indian Ocean.

Depth $2\frac{1}{2}$ to $2\frac{3}{4}$; head $3\frac{3}{5}$ to 4, width $2\frac{1}{10}$ to $2\frac{1}{5}$. Snout $3\frac{1}{5}$ to $3\frac{1}{3}$ in head; eye 4 to $4\frac{3}{4}$, 1 to $1\frac{2}{5}$ in snout, $1\frac{1}{8}$ to $1\frac{1}{2}$ in interorbital; maxillary reaches $\frac{1}{5}$ in eye, expansion $2\frac{4}{5}$ to $2\frac{1}{2}$ in eye, length $2\frac{2}{5}$ to $2\frac{3}{4}$; interorbital $2\frac{7}{8}$ to 3, convexly elevated.

Gill rakers 14 to 16 + 28 to 31, lanceolate, slightly longer than gill filaments or equal eye.

Scales 127 in lateral line to caudal base and 4 more on latter. Patch of scales behind maxillary on cheek and another behind eye, head otherwise naked. Scales with 2 to 6 obsolete radiating basal grooves; circuli fine, complete.

D. VI - I, 25 or 24, second to fourth ~~rays~~ spines $1\frac{1}{6}$ to $1\frac{7}{8}$ in eye, first branched ray $1\frac{3}{4}$ to $1\frac{4}{5}$ in head; A. II - I, I, 23 to 25, first branched ray $1\frac{3}{4}$ to $1\frac{4}{5}$; least depth of caudal peduncle $3\frac{4}{5}$ to 4; pectoral $1\frac{2}{5}$; ventral $2\frac{1}{8}$ to $2\frac{4}{5}$; caudal $2\frac{3}{4}$ to $2\frac{4}{5}$ in rest of fish.

Back dark brown, sides and below silvery white. Iris silvery white. Soft dorsal and anal with ends of lobes black, fins otherwise, pale. Caudal with middle of each lobe dark, blackish terminally.

Eastern Atlantic, from Gibraltar to Brazil and South Africa.

1981

^{nos.}
A. N. S. P., 11130 to 11148. Italy.
Bonaparte Collection (364). Dr.
J. B. Wilson.

1890
Carr 29 Mulloidichthys pflugeri (Steindachner)

Mulloides pflugeri Steindachner, Denkschr.
Akad. Wiss. Wien, Math.-naturwiss.
Classe, vol. 70, 1901, p. 485, pl. 3, fig. 4.
Honolulu. $\frac{1}{2}$ Jordan and Evermann,
Bull. Bur. Fisher., vol. 23, pt. 1, 1903
(1905), p. 251 (Honolulu). $\frac{1}{2}$ Jordan
and Snyder, Bull. Bur. Fisher., vol.
26, 1906 (1907), p. 214 (Honolulu).

Mulloides flammeus Jordan and
Evermann, Bull. U. S. Fish Comm.,
vol. 22, 1902 (1903), p. 186. Hilo. $\frac{1}{2}$
Snyder, Bull. U. S. Fish Comm., vol. 22,
1902 (1904), p. 527 (Puako Bay, Hawaii).
 $\frac{1}{2}$ Jordan and Evermann, Bull. U. S. Fish
Comm., vol. 23, pt. 1, 1903 (1905), p. 251, fig.
104 (Honolulu, Hilo, Kailua).

Mulloides samoensis (not Günther) Fowler,
Mem. Bishop Mus., vol. 10, 1928, p. 234 (part).

Genus Hypacanthus Rafinesque

Hypacanthus Rafinesque, Carrat.

Nov. Animal. Sicil., p. 43, 1810.

Type "Scomber aculeatus Linne" =
Centronotus vadijo Lacépède,
monotypic.)

Hypacanthus Rafinesque, Carrat.

Nov. Animal. Sicil., p. , 1810.

(Type Centronotus vadijo Lacépède.)

Lichia Cuvier, Règne Animal,
vol. 2, p. 321, 1817. (Type Scomber

amiae Linnaeus, designated by
Regan, Ann. Mag. Nat. Hist. Ser.
7, vol. 12, p. 348, 1903.)

Porthmeus Valenciennes, Hist.

Nat. Poiss., vol. 9, p. 191, 1833.

(Type Porthmeus argenteus
Valenciennes, monotypic.)

Herre and Montalban, Philippine

Journ. Sci., vol. 36, no. 1, May 1928,
p. 118, pl. 6, fig. 2 (Luna, Cabusao,
Zamboanga, Cotabato). + Fowler,

Mem. Bishop Mus., vol. 10, 1928, p. 227
(Honolulu, Rarotonga, Guam, Marcus
Island, Moihii, Hilo, Samoa, Apia,
Papeete); Proc. Acad. Nat. Sci. Philadelphia,
1929 (1930), p. 648 (Honolulu and Apia).

Pseudupeneus bifasciatus Jenkins,
Bull. U. S. Fish Comm., vol. 22, 1902
(1903), p. 456 (Honolulu). + Jordan

and Evermann, Bull. U. S. Fish Comm.,
vol. 23, pt. 1, 1903 (1905), p. 258, fig. 107
(Honolulu, Hilo, Kailua). + Seale,

Occas. Papers Bishop Mus., vol. 4, no. 1,
1906, p. 51 (Rarotonga). + Jordan and

Seale, Bull. Bur. Fisher., vol. 25, 1905
(1906), p. 274 (Apia). + Evermann and

Seale, Bull. Bur. Fisher., vol. 26, 1906

Body elongate, ovate, strongly compressed, deepest at soft dorsal origin. Head rather small, compressed, snout conic. Eye rather small, little advanced from middle in head, with moderate adipose lids. Mouth large, jaws about even, maxillary reaches below eye, with supplemental bone, well exposed terminally. Jaws with rather wide bands of numerous small, pointed teeth. Vomer and palatines, also tongue, with bands of villiform teeth. Nostrils together, close before eye. Lower gill rakers 8 or 9 developed. Pseudobranchiae present.

Body covered with small pointed scales. Lateral line ascends above pectoral, then descends

in long reversed curve on lower half of side, becomes straight posteriorly. Dorsal with front portion of 7 depressible spines, free with age. Soft dorsal long, low, rays 19 or 20. Anal like soft dorsal, preceded by 2 free spines. Caudal widely forked. Pectorals rather short, falcate.

One species in the Eastern Atlantic.

1985

Hypacanthus amia (Linnaeus)

Neomaber amia Linnaeus, Syst. Nat.,
ed. 10, vol. 1, p. 299, 1758 (type
locality, no locality [= Europe] ;
ed. 12, pt. 1, p. 495, 1766 (copied). —
Forsk., Descript. Animal., p. 19, 1775
(Malta). — Bonnaterre, Tabl. Ichth.,
p. 143, pl. 59, fig. 231, 1788 (no
locality). — Gmelin, Syst. Nat.
Lin., pt. 1, p. 1336, 1788 (copied).
— Walbaum, Artedii Pisc., vol. 3,
p. 212, 1792 (copied). — Schneider,
Syst. Ichth. Bloch, p. 34, 1801
(Adriatic).

Caranx amia Lacépède, Hist. Nat.
Pois., vol. 3, pp. 57, 64, 1802 (no
locality).

Con¹³⁰

Genus Collichthys Günther - 1436

Collichthys Günther, Cat. Fishes Brit.

Mus., vol. 2, 1860, p. 312. Type Sciaena
lucida Richardson, designated by
Jordan and Eigenmann, Rep. U. S. Fish
Comm., pt. 14, 1886 (1889), p. 348.

Hemisciaena Bleeker, Naturk. Tijdschr.
Dierk., vol. 1, 1863, p. 141. Type Collichthys
lucida Günther, monotypic.

Laramichthys Jordan and Starks, Proc.
U. S. Nat. Mus., vol. 28, 1904, p. 204. Type
Laramichthys raibunae Jordan and
Starks, monotypic.

Body slender, elongate, well compressed.
Head wide, highly arched above, greatly
depressed, sides more or less flattened.
Muzzle wide. Snout short, broad.
Eye small with age, advanced. Maxillary
largely hidden by suborbital sheath.
Teeth more or less uniformly small.

Lichia amia Günther, Cat. Fish.

Brit. Mus., vol. 2, p. 476, 1860

(Cape of Good Hope; Agulhas Bay). —
Thompson, Marine Biol. Rep. South
Africa, vol. 4, p. 104, 1918 (reference).

— Horman, Ann. South African Mus.,
Nat. Hist., ser. 9, vol. 9, p. 321, 1922
(Natal). — Barnard, Ann. South
African Mus., vol. 21, pt. 1, p. 559,
pl. 23, fig. 2, Oct. 1927 (Table Bay;
False Bay; Agulhas Banks; East
London & Natal).

~~11456~~
least depth of caudal peduncle
4 1/5; pectoral 1 1/10; ventral 1 1/2.

Brown, paler below. Iris brassy.
Fins all uniform brownish.

India, Burma, East Indies. I
have but a single example, evidently
the young, as ~~Day states~~ it reaches
1515 mm. Jays

11456 A. N. S. P. East Indies. Dr. H. C.
Wood. Length 205 mm.

1987

Hypocanthus amia ^{no} Fowler, Proc.
Acad. Nat. Sci. Philadelphia, vol.
86, 1934, p. 452 (Urban, Natal).

flexible.
~~free~~ Gill rakers 7+14, lanceolate,
slender, greatly longer than gill
filaments or $7\frac{1}{8}$ of eye.

Scales 84 along above lateral line
to caudal base; Enlarged scales 47
in lateral line to caudal base
and 30 more out over caudal fin
medially; 10 scales above lateral line,
8 below, 38 predorsal forward to
snout tip, 16 rows posteriorly downward
across cheek to lower hind edge.
Scales with 7 or 10 radiating short basal
striae; 30 or 31 slender, short, minute
apical denticles, with 5 to 8 transverse
series of basal elements; circuli very
fine.

D. ~~X~~, I, 41, I, third spine $2\frac{1}{3}$ in head,
thirty fourth ray $2\frac{3}{4}$; A. II, 7, second
spine 5, second ray $2\frac{3}{4}$; caudal $1\frac{1}{5}$,
cuneate, ends in long median point;

~~Centronotus luxum Lacépède, Hist.~~
~~Nat. Poiss., vol. 3, pp. 310, 318, 1802~~
~~(type locality, raised)~~

Centronotus vadigo Lacépède, Hist.
 Nat. Poiss., vol. 3, pp. 310, 318, 1802
 (type locality, Mediterranean).

Portimeneus argenteus Valenciennes, Hist.
 Nat. Poiss., vol. 9, p. 256, pl. 264, 1833
 (type locality, Cape of Good Hope)
 — Günther, Cat. Fish. Brit. Mus.,
 vol. 2, p. 471, 1860 (copied).

1735

Otolithus pama mason, Burmah
Nat. Resources, 1860, p. 695.

Sciaenoides pama Blyth, Proc. Asiatic
Soc. Bengal, vol. 27, January 1860, p. 137.
Vitany River. $\frac{1}{2}$ day, Fishes of India,
pt. 2, 1876, p. 193 (Calcutta); Fauna
British India, vol. 2, 1887, p. 124.

Sciaenoides hardwickii Blyth, Proc.
Asiatic Soc. Bengal, ^{vol.} 29, January 1860, p.
139. Vitany River.

Depth $3 \frac{1}{3}$; head $3 \frac{2}{5}$, width $1 \frac{7}{8}$.
Snout $3 \frac{7}{8}$ in head; eye $8 \frac{3}{4}$, 2 in snout,
 $2 \frac{2}{5}$ in interorbital; maxillary reaches
at least eye diameter beyond eye,
expansion (concealed) $1 \frac{1}{3}$ in snout;
length 2 in head; teeth in villiform
bands, with outer row of moderately
large well spaced canines all-around
each jaw; interorbital 5 , broadly
and well convex; preopercle edge ~~not~~

Depth $2\frac{3}{4}$ to $3\frac{7}{8}$; head $3\frac{1}{2}$ to $4\frac{1}{8}$, width $2\frac{1}{8}$ to $2\frac{1}{3}$. Snout $3\frac{1}{8}$ to $3\frac{1}{3}$ in head; eye $4\frac{1}{4}$ to $6\frac{7}{8}$, $1\frac{1}{3}$ to 2 in snout, $1\frac{1}{3}$ to $2\frac{1}{2}$ in interorbital, adipose lids moderate; maxillary nearly reaches opposite hind eye edge to $\frac{1}{4}$ eye diameter beyond eye, expansion $1\frac{3}{4}$ to 2 in eye, length $1\frac{7}{8}$ to $2\frac{1}{10}$ in head from snout tip; interorbital 3 to $3\frac{1}{4}$, convexly elevated. Gill rakers 2 to 5 + 8 to 14, usually 1 or 2 above and 4 or 5 below rudimentary $1\frac{3}{4}$ in gill filaments, which subequal with eye.

Head naked, except few small scattered scales above preopercle, on postocular and behind maxillary. Lateral line

1970

with slight arch in front followed by deep curve below median lateral body axis, rising to horizontal on tail posteriorly.

D. I, VII — I or II, 19, I or 20, I, spines short, strong, low, first branched ray $1\frac{2}{5}$ to $1\frac{7}{8}$ in total head length; A. II — I or II, 19, I or 20, I, first branched ray $1\frac{2}{5}$ to 2; caudal well forked, $1\frac{1}{8}$ to slightly greater than head; least depth of caudal peduncle $3\frac{7}{8}$ to $4\frac{1}{2}$ in total head length; pectoral $1\frac{3}{4}$ to 2; ventral 2 to $2\frac{1}{8}$.

Back dull olive or brown, sides and below silvery white. Iris gray. Soft dorsal dark brown above, paler basally. Caudal brown.

Anal whitish, front lobe deep
neutral gray apically, with
narrow whitish edge terminally
and posteriorly. Pectoral
brownish. Ventral dark
neutral gray terminally, head
edge whitish like base of fin.

South Africa. Also in the
Eastern Atlantic and Mediterranean.

A. N. S. P., one example. Durban,
 Natal. 1931. Mr. H. W. Bell-Marley.
 Length 395 mm.

ray 3; caudal 1, deeply forked, lobes narrowly triangular; least depth of caudal peduncle $3\frac{1}{2}$ to $3\frac{3}{5}$; pectoral $1\frac{4}{5}$ to 2; ventral $1\frac{4}{5}$ to $1\frac{7}{8}$.

Back dull olivaceous, sides and below pale or whitish. Iris whitish. ^{no} Iris pale brownish, lower ones whitish.

New South Wales, Victoria, Tasmania, Western and South Australia, New Zealand, Lord Howe, Norfolk and Raoul Islands.

12629 U.S.N.M. Tasmania. British Museum. Length 250 to 251 mm. 2 examples.

39676 U.S.N.M. New Zealand. Otago University. Length 220 mm.

42027 U.S.N.M. Port Jackson, New South Wales. Length 248 mm.

49337 to 49339 A.N.S.P. Melbourne, Victoria. Mrs. Agnes F. Kenyon. Length 285 to 316 mm.

1993

Genus Trachinotus Lacépède

Trachinotus Lacépède, Hist. nat. Poiss., vol. 3, p. 78, 1802. (Type Labrus falcatus Linnaeus, monotypic.)

Trachynotus (not Latreille 1829 or Gray 1829) Günther, Cat. Fish. Brit. Mus., vol. 2, p. 480, 1860. (Type Labrus falcatus Linnaeus.)

Acanthinion Lacépède, Hist. nat. Poiss., vol. 4, pp. 499, 500, 1803. (Type Chaetodon rhomboides Bloch, designated by Jordan and Evermann, Genera of Fishes, pt. 1, p. 64, 1917.)

D. III, 10, I (II, 12 in text) in total head length, third spine $5\frac{1}{5}$, first ray 3; caudal $1\frac{1}{5}$, little emarginate behind; least depth of caudal peduncle $3\frac{3}{4}$; pectoral $1\frac{2}{5}$; ventral $2\frac{1}{10}$.

Above bluish gray, without markings, silvery below. All fins golden. Length 125 mm. (Güichenot.)

Chile.

Doliodon Girard, Proc. Acad.
Nat. Sci. Philadelphia, 1858,
p. 168. (Type Gasterosteus
carolinus Linnaeus, orthotypic.)

Bothrolaemus Holbrook, Ichth.
South Carolina, p. 80, 1855.
(Type Trachynotus pampanus
Valenciennes, monotypic.)

Pampanoa Fowler, Proc. Acad.
Nat. Sci. Philadelphia, 1906, p.
116. (Type Chaetodon glauca
Block, orthotypic.)

Cue¹²⁹

Emmelichthys cyanescens (Guichenot)

Boyarodon cyanescens Guichenot, Hist. fisica
polit. Chil. ¹⁸⁴⁴ Zool., vol. 2, 1847, p. 207, atlas,
pl. 5, fig. 1. Valparaiso.

Erythrichthys cyanescens Günther, Cat.
Fishes Brit. Mus., vol. 1, 1857, p. 395 (compiled).
— Jordan and Fowler, Rep. U. S. Fish Comm.,
pt. 17, 1887 (1873), p. 528 (compiled).

Depth $4\frac{1}{4}$; head $3\frac{1}{2}$. Snout $3\frac{3}{4}$ in
head from snout tip; eye $3\frac{3}{4}$, equals
snout; maxillary reaches $\frac{1}{8}$ in eye,
expansion 2, length $2\frac{1}{2}$ in head; interorbital
very low; preopercle entire.

Scales small; predorsal scales extend
forward at least to nostrils; 11 or 12
rows on cheeks to preopercle edge; caudal
half scaly basally, fins otherwise
scaleless.

D. VIII - I - I - I - I - I, I, 9, fourth spine
 $2\frac{1}{3}$ in total head length, first ray $3\frac{1}{4}$;

Body well compressed, moderately elevated, usually with ovate contour. Head moderately compressed, rather small. Snout obtuse or abruptly truncate. Eye moderate or small, median or but slightly advanced in length of head, without adipose lids. Mouth nearly horizontal. Premaxillaries protractile. Maxillary reaches below eye, without supplemental bone. Bands of villiform teeth in jaws, on vomer and palatines, vanishing with age. Preopercle entire with age, in young furnished with spines, which larger at angle of bone. Gill membranes well united. Gill rakers short. Pseudobranchiae

1996

present in young, vanish with age. Scales small, smooth. Lateral line unarmed, little arched, without keel on caudal peduncle. Spinous dorsal of 6 rather low spines, united by membrane in young, free in adult, vanish with age. Second dorsal long, elevated in front. Anal opposite soft dorsal, similar, preceded by 2 stout and nearly free spines, connected with rayed fin, disappear with age.

Large silvery fishes of tropical seas, some species valued highly as food.

Analysis of Species

a. Trachinotus. Body deep, depth more than half its length; color uniform. blochii.

a.⁷ Acanthinion. Body ovate, depth less than half its length; 3 to 5 blackish spots along lateral line. bailloni.

with 1 or 2 transverse series of basal elements and circuli moderately fine.

D. VII - I, 8, I, abnormally IV - I, 7, I,
variably VI - I, 9, I, second or third
spine $1\frac{4}{5}$ to 2 in total head length,
second ray $1\frac{1}{2}$ to $1\frac{3}{5}$; A. II, 8, I, second
spine 3 to $3\frac{1}{8}$, second ray $1\frac{3}{4}$ to $1\frac{7}{8}$;
caudal $1\frac{2}{3}$ to $1\frac{1}{2}$, little emarginate behind;
least depth of caudal peduncle $2\frac{1}{8}$ to
 $2\frac{1}{6}$; pectoral $1\frac{3}{5}$ to $1\frac{3}{4}$; ventral
 $1\frac{2}{3}$ to $1\frac{7}{8}$.

Pale brown generally, whitish below.
Five longitudinal dark bands,
median at median body axis and
extends over median caudal rays.
Upper and lower dark bands over
median approximate over caudal base.
Iris silvery white, except as crossed
by dark median band. Often dark

Trachinotus blochii Cuvier, Hist. Nat.
Pois., vol. 8, p. 425, 1831 (Fort Dauphin,
Madagascar; Massana, Red Sea). —
Bleeker, Verflag. Kon. Akad. Wet.
Amsterdam., vol. 12, pp. 52, 74, 1861.

— Fowler, Proc. Acad. Nat. Sci.
Philadelphia, vol. 86, 1934, p. 450
(Durban, Natal); Mem. Bishop
Mus., vol. 11, no. 6, p. 405, 1934
(reference).

1347

d. ² Dorsal spines 10, rays 26 or 27.

Cruel ³ name only Cypselichthys

Genus Emmelichthys Richardson ^{Cruel 30}

Emmelichthys Richardson, Voy. Erebus and Terror, Fisher, vol. 2, 1844, p. 47.

Type Emmelichthys nitidus Richardson, monotypic.

Boxaodon Guichenot, Hist. pisc. polit.

Chile, ^{Gay} Zool., vol. 2, 1847, p. 108. Type

Boxaodon cyanescens Guichenot, monotypic.

Body elongate, slender. Head moderate, attenuated. Eye moderate, nearly median. Mouth moderate, very protractile, premaxillary spines reaching occiput. Teeth obsolete. Lower pharyngeals separate and like upper with cardiform teeth. Preopercle entire. Lower gill rakers 27 or 28.

Pseudobranchiae present. Branchiostegals 6. Scales rather small, 90 to 100, ctenoid.

1998
Trachinotus blochii Lacépède

Cassionotus blochii Lacépède, Hist.
Nat. Poiss., vol. 3, pp. 92, 95, pl. 3,
fig. 2, 1802 (no type locality)

No lateral ridge on caudal peduncle.
Long scale flap between ventral bases.
Dorsals separated, with several isolated
spines between and all spines feeble.
Dorsal spines 14, rays 7 or 10. Anal
spines 3, rays 10.

Analysis of ~~the~~ species Colton et al.,
a.¹ depth $4\frac{1}{4}$; soft anal rays 10. cyaneus.
a.² depth $5\frac{1}{4}$ to $5\frac{7}{8}$; soft anal rays 8. nitidus.

Crust 3
name only

Trachinotus blochi Weber and
Beaufort, Fishes Indo Austral.
Archip, vol. 6, p. 286, 1931 (compiled).

23422. Tatu Bay, Sulo Island,

first anchorage. September 19, 1909.

Length 98 mm. [1960.] On top of head and back dusky olive generally. Side of body translucent pearl gray, probably darker in life. Narrow white stripe close before spinous dorsal. Black stripe begins just behind point of snout divides between eyes and continues into broader white stripe at nape, latter running along below dorsal base and ends at caudal base. Pale stripe from snout tip through eye above nearly to angle of gill-opening. Similar one across premaxillary through lower part of

Gasterosteus ovatus (part) Linnaeus,
 Syst. Nat., ed. 10, pt. 1, p. 296,
 1758 (Asia); ^{ed. 12, pt. 1, p. 490, 1766 (copied).} — Bonnaterre,
 Tabl. Ichth., p. 137, 1788 (copied).
 — Gmelin, Syst. Nat. Lin., pt. 1, p.
 1325, 1789 (copied). — Walbaum,
 Arted. Pisc., vol. 3, p. 448, 1792
 (copied).

121

Family Emmelichthyidae Cuv 121

Body fusiform, elongate, scarcely compressed. Mouth oblique, lower jaw-projecting. Teeth absent, small or rudimentary. Maxillary rather wide, slips below preopercular. Palate toothless. Nostrils paired. Preopercle entire or with flat thin serrae. Opercle ends in flat point. Premaxillaries greatly protracile, spines reaching occiput. Gill membranes free from isthmus. Gills 4, slit behind fourth. Pseudobranchiae present. Lower pharyngeals with cardiform teeth. Pyloric coeca few. Scales moderate, ciliated. Head scales, except snout tip. Bases of soft dorsal and anal scales posteriorly. Lateral line complete. Dorsals separate or continuous, when with free spines between, spines slender and about 15. Soft dorsal low, moderate, naked or with basal scaly sheath. Last rays of soft dorsal and anal extended. Anal with

Trachynotus ovatus Günther, Cat.

Fish. Brit. Mus., vol. 2, p. 481, 1860
(Malay Peninsula; Ceylon; Anicetum; Red Sea;
Amboyna; Moluccas; Pinang; India; China;
Australia).

— Bleeker, Ned. Tijds. Dierk., vol. 1,
p. 240, 1863 (Albi). — Day, Fishes of

Malabar, p. 97, 1865. — Kner, Reise
Novara, Fische, p. 164, 1865 (Java).

— Playfair, Fishes of Zanzibar, p. 64,
1866 (Zanzibar).

— Klunzinger, Verh. zool. bot. Gesell.
Wien, vol. 21, p. 449, 1871 (Red Sea).

— Day, Fishes of India, pt. 2, p. 234, pl.
51 B, fig. 2, 1876. — Bleeker, Rech. Faune
Madagascar, pt. 4, p. 98, 1874 (reference).

— Allegre and Macleay, Proc. Linn. Soc. New
South Wales, vol. 1, p. 329, 1877.

— Castelnau, Proc. Linn. Soc. New South
Wales, vol. 3, p. 383, 1879.

— Klunzinger, Sitzb. Ber. Akad. Wiss. Wien,
math.-naturw. Kl., vol. 80, pt. 1, p. 1879 (1880).

Soft dorsal white, with rather large anterior subterminal black blotch. White caudal with 3 black blotches on each lobe and several small median black spots. Anal white, with small blackish brown subterminal blotch. Ventral whitish, with 3 or 4 dusky cross bands. Black lateral band present and greatly contrasted.

2003

— Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 44, 1880.

— Macleay, Proc. Linn. Soc. New South Wales, vol. 5, pt. 4, p. 545, 1881 (Port Jackson; all Australian coasts); vol. 7, pt. 3, p. 359, 1882 (New Guinea). — Westwood, Fish Fish. New South Wales, p. 47, 1882.

— Klunzinger, Fische Roth. Meer., vol. 1, p. 104, 1884. — Meyer, Anal. Soc. Españ. Hist. Nat. Madrid, vol. 14, p. 23, 1885 (North Celebes; Cebu). — Gilby, Cat. Fish. New South Wales, p. 27, 1886. — Day, Fishes of India, Suppl., p. 790, 1888; Fauna British India, Fishes, vol. 2, p. 115, 1889. — Sauvage, Hist. Madagascar, Poiss., p. 332 (note), 1891; p. 518 (reference).

— Regan, Ann. Natal Mus., pt. 3, p. 246, May 15, 1908 (Kosi Bay; Durban Bay). — Gilchrist and Thompson, Ann. South African Mus., vol. 6, pt. 2, p. 187, 1908 (Natal).

57
from ~~mouth~~ through eye to caudal
base medially, where ending in
round blackish spot little smaller
than pupil. Third dark band
from infraorbital back to pectoral
base and along lower surface of
caudal peduncle to caudal base,
faint posteriorly. Iris ^{with} silvery white
bordering lines to dark median
band and some gray above and
below. Fins all pale to whitish,
soft dorsal and anal each with
subbasal grayish longitudinal band.

Only known from the Philippines.

— Gilchrist and Thompson, Ann.
Durban Mus., vol. 1, pt. 4, p. 391, 1917
(reference).

— Barnard, Ann. South African Mus.,
vol. 21, pt. 2, p. 553, Oct. 1927 (Natal,
Delagoa Bay; Chinde).

Amia angustata Smith and Radcliffe

Amia angustata Smith and Radcliffe,
Proc. U. S. Nat. Mus., vol. 41, 1911, p. 253,
fig. 1. Malanipa Island, east of
Zamboanga.

Trachinotus ovatus Steindachner,
Denks. Akad. Wiss. Wien, math.-naturw.
Kl., vol. , p. 27, 1865

— White, Synop. Fish. New-South Wales,
p. 41, 1904.

— Jordan and Sale, Bull. Bur. Fisher.,
vol. 25, p. 35, 1906.

— Stead, Fishes Fish. New-South Wales,
p. 70, 1908.

— Jordan and Richardson, Mem. Carnegie
Mus., vol. 4, no. 4, p. 180, 1909 (Takao).

— Ogilby, Mem. Queensland Mus., vol. 5,
p. 154, pl. 19, 1916 (Queensland; New-South
Wales).

scale, at least in anterior part of
course. Scales with 10 to 12 basal
radiating striae; 67 to 93 apical
denticles with 2 or 3 transverse series
of basal elements; ~~many~~ circuli fine.

D. VII - I, 9, I, third spine $1\frac{7}{8}$ to $2\frac{1}{10}$
in head, second ray $1\frac{1}{2}$ to $1\frac{2}{3}$; A. II, 8, I,
second spine $2\frac{3}{4}$ to 3, first ray $1\frac{2}{3}$ to $1\frac{4}{5}$;
caudal $1\frac{1}{2}$ to $1\frac{2}{3}$, slightly emarginate
behind; least depth of caudal
peduncle $2\frac{1}{5}$; pectoral $1\frac{1}{2}$; ventral
 $1\frac{3}{5}$ to $1\frac{3}{4}$.

Pale brown generally, nearly
whitish. Dark brown band along
each side of occiput to base of soft
dorsal. Second band from over eye
back along upper surface of caudal
peduncle to bases of upper caudal
rays. Median lateral dark band

— Oshima, Philippine Journ. Sci.,
vol. 26, no. 3, p. 409, March 1905
(Tachoker, Formosa).

— Whitley, Rec. Austral. Mus., vol. 16,
p. 16, 1927.

— McCulloch, Austral. Mus. Mem., no. 5,
Pt. 2, p. 192, Sep. 10, 1929 (reference). —

— Fowler, Mem. Bishop Mus., vol. 10, p.
151, 1928.

Depth 3; head $2\frac{3}{5}$, width 2. Snout $4\frac{2}{5}$ to $4\frac{2}{3}$ in head; eye $2\frac{7}{8}$ to $3\frac{1}{10}$, greater than snout or interorbital; maxillary reaches $\frac{4}{5}$ to eye, expansion $2\frac{2}{5}$ to $2\frac{2}{3}$ in eye, length $1\frac{7}{8}$ to 2 in head; teeth villiform, in bands in jaws, on vomer and palatines; interorbital $5\frac{2}{3}$ to 6, level; preopercle ridge entire, edge minutely serrated. Gill rakers $5 + 14$, lanceolate, nearly twice length of gill filaments or $2\frac{10}{4}$ in eye.

Scales 25 in lateral line to caudal base and 3 or 4 more on latter, 2 above, 6 below, 4 predorsal, 3 rows on cheeks; head naked, except cheeks and opercles. Tubes of lateral line large, well exposed, each with broad crimped basal

Scomber falcatus (not Linnaeus)

Forsk., Descript. Animal., p.

57, 1775 (Lohya, Red Sea). — Bonnaterre,
Tabl. Ichth., p. 142, 1788 (copied). — Gmelin,
Syst. Nat. Linn., pt. 1, p. 1334, 1789 (copied).

— Walbaum, Artedi Pisc., vol. 3, p. 218, 1792
 (copied). — Schneider, Syst. Ichth. Bloch, p. 31,
 1801 (copied).

Trachinotus falcatus Lacepède,

Hist. Nat. Poiss., vol. 3, p. ⁷⁸79, 1802
 (Arabia; St. Dauphin, Madagascar).

— Rüppell, Atlas Reise nördl. Afrika,
Fische, p. 88, 1828 (Bay of Massana).

— Cuvier, Hist. Nat. Poiss., vol. 8, p. 430,
 1831 (compiled).

3 small spines and about 9 rays.

Caudal widely forked or emarginate,

Small trim little fishes, brilliant and active, most of deep water in the Indo-Pacific. The known forms follow.

Analysis of ~~the~~ genera 6 pt. 2nd ed.

a.¹ Posterior dorsal spine isolated, 13 in number.

b.¹ Maxillary expansion half of eye.

c.¹ Gill rakers 28 below. Emmelichthys.

c.² Gill rakers 22 below. Dipterygionotus.

b.² Maxillary expansion $2\frac{1}{4}$ to 3 in eye; gill rakers 21 below.

Sermia.

a.² Posterior dorsal spines connected by membrane.

d.¹ Dorsal spines 11 or 12, rays 9 to 11.

e.¹ Dorsal spines 11, hind ones low and last longer than penultimate.

Euthrodes.

e.² Dorsal spines 12, penultimate one

longer than last and not very low. Platygenion.

Cuv. name only

Centronotus ovalis Lacépède, Hist.
nat. Poiss., vol. 3, pp. 309, 316, 1802.
(type locality, "mers de l'Asie").

~~Centronotus ovalis~~

1565

~~56277 U.S.N.M. Iloilo. G.A. Ling.
Stanford University. Length 85 to 75 mm.
2 examples.~~

~~57687 U.S.N.M. Japan. P.L. Jouy.
Length 163 to 215 mm. 3 examples.~~

~~59676 U.S.N.M. Yamagawa.
Dr. H. M. Smith. Length 110 mm.~~

~~59677 U.S.N.M. Yamagawa.
Dr. H. M. Smith. Length 166 mm.~~

~~59678 U.S.N.M. Yamagawa.
Dr. H. M. Smith. Length 113 or 114 mm.
2 examples.~~

~~59679 U.S.N.M. Susaki, Japan.
Dr. H. M. Smith. Length 170 mm.~~

~~59957 U.S.N.M. Hawkesbury River,
New South Wales. D. G. Stead. Length
120 to 133 mm. 2 examples.~~

~~71363 U.S.N.M. Fuyashima, Japan.
Albatross Collection 1906. Length 26 mm.~~

Trachinotus mookalee Cuvier,

Hist. Nat. Poiss., vol. 8, p. 423,
 (type locality, Pinangcherry).

1831, (type locality, on Mookalee

parah Russell, Fishes of Coromandel, vol.
 2, p. 39, pl. 154, 1803 (type locality, Vijayapatnam).

— Bleeker, Nat. Geneesk. Arch.

Ned. Indie, vol. 2, p. 516, 1845

(Java); Verh. Batavia. Genoot.

(Midd. Java), vol. 23, p. 8, 1850

— Jordan, Madras. Journ. Lit. Sci.

1851, p. 136. — Bleeker, Nat. Tijds.

Ned. Indie, vol. 3, p. 409, 1852

(Amprit), p. 445 (Bangka), p. 741

(Bellockombu); Verh. Batavia.

Genoot. (Makreel.), vol. 24, p. 47,

1852 (Batavia; Samarang;

Surabaya; Pasuruan); vol. 25,

(Bengal.), p. 44, 1853 (reference);

Nat. Tijds. Ned. Indie, vol. 8, p.

168, 1855 (Cocos-Keeling); Act.

1 example. Duradero Bay tide water,
Luzon. July 23, 1908. Length 120 mm.

20398. Sandakan Bay, Borneo.
March 2, 1908. Length 110 mm.

5256. Sandakan Bay. March 21,
1908. Length 107 to 119 mm. 3 examples.

13598. Tanabeke. December 21, 1909.
Length 142 mm.

9749 Kowloon market, China.
October 5, 1908. Length 190 mm.

12614 U.S.N.M. Zanzibar. British
Museum. Length 102 mm.

16250 U.S.N.M. ~~Yapac Bay and~~
~~Palmer. Length 245 mm.~~ Borneo.
Bureau of Fisheries (No. 3634).
Length 136 mm.

51983 U.S.N.M. Negros. Dr. Bashford
Dean. Length 45 to 128 mm. 5 examples.

56275 U.S.N.M. Cavite. G. A. Ling.
Length 76 mm.

Soc. Sci. Ind. Neerl., vol. 1, no.
 5, p. 75, 1856 (Amboina; Nat.
 Tijds. Ned. Indie, vol. 13, p. 284,
 1857) (Tjirutyup, Biliton;
 Act. Soc. Sci. Ind. Neerl., vol.
 5, no. 7, p. 2, 1858-59 (Sinka-
 wang, Borneo); Nat. Tijds.
 Ned. Indie, vol. 20, p. 142, 1859-
 60 (Cocos-~~Indonesische~~ Keeling), pp.
 237, (Singapore); ~~vol.~~ vol. 21, p.
 449
 138, 1860 (Muntok, Banka).

~~171~~

7293. Manzanal, Mindoro. June 4,
1908. Length ^{89 to} 123 mm. 2 examples.

^{2001,}
2010 and 22011. Mariveles Bay,
Manila Bay. January 27, 1909. Length 81
to 103 mm.

17134. Murcielagos Bay, Mindanao.
August 20, 1909. Length 114 mm.

20660. North end of Endeavor Strait,
north-west coast Palawan. December 22,
1908. Length 80 mm.

17264, 17265, 19307 to 19309, 19311. Pandanon
Island. March 24, 1909. Length 53 to 114 mm.

19479. Port Calton, Pangasinan River,
Busuanga Island. December 16, 1908.
Length 102 mm.

1 example. Port San Vicente, Luzon.
November 18, 1908. Length 100 mm.

1 example. River at Pasacao, Luzon.
March 9, 1909. Length 74 mm.

2011

Trachinotus mookalee Bleeker,
Act. Soc. Sci. Ind. Neerl., vol. 2,
no. 7, p. 5, 1857 (Amboina).

Trachynotus mookalee Cantor,
Journ. Asiatic Soc. Bengal, vol. 18, pt.
2, p. 1102, 1849 (1850) (Pinang Sea)
(error).

6477. Beach at village near Chase
Head, Endeavor Strait, Palawan.

December 22, 1908. Length 90 mm.

20734. Balayan Bay, Taal. January
19, 1908. Length 54 mm.

12450. Bugsuk Island, Balabac.
January 5, 1909. Length 190 mm.

22587. Caiholo River, Ulugan Bay,
Palawan. December 29, 1908. Length 80 mm.

6283. Candaramon Island, Balabac.
January 4, 1909. Length 225 mm.

17472 [1325], 22387. Cannichala Bay,
Ragay Gulf, Luzon. March 11, 1909.
Length 95 to 190 mm. ♂ (1325.) Top of
head and back with olive shades
speckled with reddish brown;
similar color beneath lateral line
but much paler, spots larger and
more distinct; median lateral

Trachinotus affinis Cuvier,
Hist. Nat. Poiss., vol. 8, p. 428, 1831
(type locality, Malabar coast).

Trachinotus ^gfalcifer Cuvier,
Hist. Nat. Poiss., vol. 8, p. 428, 1831
(type locality, Malabar coast).

Trachinotus drepanis Cuvier,
Hist. Nat. Poiss., vol. 8, p. 429, 1831
(type locality, Seychelles).

Trachinotus auratus Richardson,
Ichth. China and Japan, p. 270, 1846
(type locality, China, Macao).

obscure dark bands, frequently broken
as spots.

Suez, Aden, Arabia, Maldives,
Zanzibar, Natal, Ceylon, Andamans,
Singapore, East Indies, Philippines,
New Territory, Queensland, New South Wales,
North ~~Western Australia~~ Indo China, China,
Formosa, Japan, Riu Kiu. A very

handsome and abundant species,
easily known by its swarthy, speckled
or mottled coloration. The young are
quite like the adults, only with few
dark blotches on the fins which break
into the numerous bands with age.

Some small examples paler, less
mottled, paired fins nearly uniform,
but lower caudal lobe with seven
blackish blotches and upper lobe with
but 4 or 5 of which outer well spaced.

In the very young white spinous
dorsal has large black apical blotch
and 1 or 2 horizontal dusky bands.

? Lichia glauca (not Linnaeus) Goyorza,
Anal. Soc. Espan. Hist. Nat. Madrid,
vol. 17, p. 291, 1888 (Manila Bay).

233

dark.

Red Sea, East Indies, Philippines,
China, Japan, Queensland, Polynesia.
Described above from the type of
Amia wilsoni.

47505 A. N. S. P. Philippines. Length
71 mm. Type of Amia wilsoni.

2014

Depth $1\frac{3}{5}$ to 2; head 3 to $3\frac{1}{2}$, width $1\frac{7}{8}$ to 2. Snout $3\frac{1}{4}$ to $3\frac{2}{5}$ in head; eye 3 to $4\frac{3}{4}$, 1 to $1\frac{1}{3}$ in snout, $1\frac{2}{5}$ to $1\frac{3}{5}$ in interorbital; maxillary reaches $\frac{1}{8}$ to $\frac{1}{5}$ in eye, expansion $2\frac{1}{8}$ to $3\frac{1}{4}$, length $2\frac{3}{4}$ to 3 in head; lips thick, fleshy; interorbital $1\frac{1}{2}$ to 3, convexly elevated. Gill rakers $8+16$, of which 5 lower rudimentary and others lanceolate, $\frac{1}{2}$ of gill filaments, which nearly equal eye.

Scales minute. Lateral line little waved, slightly arched anteriorly.

D. I, VIII, 19, I to 23, I, third erect spine 3 to $7\frac{1}{4}$ in head, with age lobe nearly reaching

caudal tip; A. $\underline{\text{II}} - \underline{\text{I}}, 18, \underline{\text{I}}$ to $\underline{\text{I}}, 22, \underline{\text{I}}$,
 first branched ray $1\frac{2}{5}$ in head,
 with age reaches middle of
 caudal; least depth of
 caudal peduncle $3\frac{1}{2}$ to 4;
 pectoral $1\frac{1}{4}$ to $1\frac{2}{7}$, rays $\underline{\text{II}}, 16$;
 ventral rays $\underline{\text{I}}, 5$, fin $2\frac{1}{8}$ to
 $2\frac{1}{4}$ in head; caudal $3\frac{7}{8}$ in
 rest of fish, widely forked,
 slender lobes sharply pointed.

Back drab to neutral
 brown, sides paler and below
 silvery white. General appearance
 usually bright silvery white.
 Iris gray. Spinous dorsal
 membranes transparent, dark
 on fin spines. Soft dorsal with
 front lobe black, rest of fin
 pale brown. Caudal light

brown. Pectoral brownish,
other fins whitish.

Red Sea, Zanzibar, Delagoa Bay,
Natal, Seychelles, Madagascar,
India, Ceylon, Andamans, Malaya,
East Indies, Philippines, China,
Formosa, Japan, North Australia,
Queensland, New South Wales,
Melanesia, Polynesia.

Four examples. Abuyog, Leyte.
July 26, 1907. Length 75 to 95 mm.

One example. Atulayan Bay,
Luzon. June 17, 1909. Length 98 mm.
2421. Cebu market. March 31,
1909. Length 635 mm.

Three examples. Jolo (under
blue medusa). September 8, 1908.
Length 22 to 35 mm.

8605 to 8607. Matnog Bay.
May 31, 1907. Length 225 to 275 mm.

Eight examples. North end of
Endeavour Street, north west coast
of Palawan. December 22, 1908.
Length 50 to 59 mm.

21798 to 21800, 21810. Taulayan
Island. March 24, 1909. Length 50
to 116 mm.

Seven examples. Taulayan Island.
March 23, 1909. Length 17 to 22 mm.

D. VII — I, 8, I, first spine $1\frac{1}{3}$
in head, first branched ray $2\frac{1}{6}$;
A. I, 6, I, first branched ray 2;
caudal $1\frac{1}{8}$, deeply forked, lower
lobe longer; least depth of caudal
peduncle $2\frac{2}{3}$; pectoral $1\frac{1}{3}$;
ventral $1\frac{2}{5}$.

Largely dull brownish, back
with slight olive tint and below
paler. From upper postocular edge
whitish band extends back to
suprascapula and horizontally
along upper side, crosses lateral
line and ends below soft dorsal.
Second parallel similar band from
lower eye edge back above pectoral
base and ends at middle of front
of caudal peduncle. Also traces
indistinctly of third parallel band
from lower pectoral base back until

20778. Puget Sound Harbor, Puget Sound
Alaska. November 22, 1908. Length
20 mm.

Depth $3\frac{1}{8}$; head $3\frac{1}{3}$, width 2.

Snout $2\frac{1}{3}$ in head; eye $4\frac{1}{8}$, $1\frac{2}{3}$ in snout, $1\frac{1}{5}$ in interorbital; maxillary reaches eye, expansion $1\frac{3}{4}$ in eye, length $1\frac{1}{3}$ in head; teeth small, simple, conic, uniform, 2 rows above anteriorly and 5 below anteriorly, none on palate or tongue; interorbital $3\frac{1}{2}$, broadly convex. Gill rakers $8 + 22$, lanceolate, $1\frac{3}{5}$ in gill filaments or $2\frac{1}{2}$ in eye.

Scales 36 in lateral line to caudal base and 3 more on latter; 3 above, 6 below, 14? predorsal; 3 rows on cheeks. Scales with 4 to 6 basal radiating striae; 155 to 160 apical denticles, with 10 to 12 transverse series of basal elements; circuli very fine.

2019

U. S. N. M., no. 52312. Apia,
Samoa. Bureau of Fisheries.
Length 250 mm.

U. S. N. M., no. 66063. Vavau,
Tonga Islands. Albatross Collection.
Length 128 mm.

U. S. N. M., no. 66067. Vavau,
Albatross Collection. Length 225 mm.

A. N. S. P., one example. Durban,
 Natal. 1931. H. W. Bell Marley.
Length 228 mm.

A. N. S. P., one example. Durban.
1932. H. W. Bell Marley. Length 407
mm.

1957

chiefly on scale structure. He describes ~~the~~ scales as having "instead of the usual fan-of diverging striae on their basal portions, a triangular space filled up by a number of extremely fine, closely approximating striae, parallel to each other, and also parallel to the basal margin, which is cut quite square and entire." This led him to form the name from, a without and pittis. flabellum or fan.

Analysis of species.

<u>a.</u> ¹ dorsal rays 13 or 14.	<u>georgianus</u> .
<u>a.</u> ² dorsal rays 15 to 17.	<u>trutta</u> .

2020

Trachinotus bailloni (Lacépède)

Caesiomorus bailloni Lacépède,
Hist. nat. Poiss., vol. 3, pp. 92, 93,
pl. 3, fig. 1, 1802 (no type locality).

Trachinotus bailloni Cuvier, Hist.
nat. Poiss., vol. 8, p. 431, 1831
(Fort Dauphin, Madagascar).

— Bleeker, nat. Tijds. ned. Indie,
vol. 3, p. 237, 1852 (Wahai), p. 741
(Kema, Celebes); Verh. Batavia.
Genoot. (makreel.), vol. 24, p. 46,
1852 (Batavia); nat. Tijds. ned.
Indie, vol. 6, p. 457, 1854 (Amboina);
vol. 7, p. 361, 1854 (Batjan); vol. 9,
p. 492, 1855 (Batjan); vol. 10, p.
469, 1856 (Saporoea); ~~act.~~ Act. Soc.
Sci. Ind. neerl., vol. 1, no. 3, p. 31,

eye in width, along each side of snout
to eye then over postocular until
finally crossing lateral line below soft
dorsal and finally various and
reaching median base of caudal. Below
dark lateral band ground color
whitish, but on sides of body mottled
or speckled with dusky. Iris brown.
or slate gray, narrow yellow circle
around pupil. Barbels whitish.
Spinous dorsal gray, darker terminally
and blotched with whitish. Soft
dorsal pale brown with 3 or 4 dark
irregular longitudinal bands. Caudal
pale brownish to whitish on inner edges,
each lobe with 9 oblique dusky to
blackish bands, those of lower lobe
mostly broader and more blackish,
also not reaching lower fin edge.
Other fins all dull brownish with

1856 (Manado); (no. 5, vol. 1) p. 6,
 1856 (Amboina); vol. 2, no. 7, p.
 5, 1857 (Amboina); hat. Tijds.
 Ned. Indie, vol. 12, p. 214, 1857
 (Kias); vol. 13, p. 477, 1857 (Triji,
 Java); Act. Soc. Sci. Ind.
 Neerl., vol. 5, no. 8, p. 2, 1858-59
 (Tobariri, Celebes; hat. Tijds.
 Ned. Indie, vol. 17, p. 142, 1858-59
 (Boleling, Bali); vol. 20, p. 206,
 1859-60 (Boleling); hat. Tijds.
 Ned. Indie, vol. 22, p. 65, 1860
 (Benculen); Act. Soc. Sci. Ind.
 Neerl. (Sumatra?), vol. 8, p. 2, 1860
 (Benculen); ~~Sumatra~~, vol. 8, p. 65,
~~1861~~ Celebes), vol. 8,
 p. 38, 1861 Celebes; hat.
 Tijds. Ned. Indie, vol. 22, p. 65, 1860
 Verslag. Kon. Akad. Wet. Amsterdam,
 vol. 12, p. 74, 1861 (Pinang).

caudal base and 2 more on latter;
2 or 3 above, 6 below, 13 predorsal
scales forward nearly to snout tip;
3 rows of scales on cheek below eye.
Tubes of lateral line with about 5 to
8 tubules. Scales with 5 or 6 basal
radiating striae; 33 (young) to 185
apical denticles, with 2 to 13 transverse
series of basal elements; circuli very
fine.

D. VII or VIII - I, 7, I, third spine $1\frac{1}{2}$ to
 $1\frac{2}{3}$ in head, first branched ray $1\frac{4}{5}$ to
 $2\frac{1}{8}$; A. I, 6, I, first branched ray $1\frac{3}{4}$ to
 $1\frac{4}{5}$; caudal 1 to $1\frac{1}{4}$, deeply forked,
with slender pointed lobes; least depth
of caudal peduncle $2\frac{3}{4}$ to $3\frac{1}{2}$; pectoral
 $1\frac{1}{2}$ to $1\frac{3}{5}$; ventral $1\frac{2}{5}$ to $1\frac{1}{2}$.

Back dark umber brown, all more
or less mottled or speckled with
blackish. Blackish brown band less than

— Stein Waite, Mem. Austral. Mus.,
 no. 3, p. 190, 1897 (Funafuti).
Steindachner, Denks. Akad. Wiss.
 Wien, math.-naturw. Kl., vol. ,
 p. 22, 1902.

— Waite, Rec. Austral. Mus., vol. 5,
 p. 25, 1903; vol. 6,

p. 200, 1904.

(Zamboanga).

— Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. 66, 1906 (1907),

— Jordan and Starks, Proc. U. S.

Nat. Mus., vol. 32, 1907, p. 495

— Stead, Fishes of Australia, p. 264, 1906.

— Jordan and Richardson, Mem.

Carnegie Mus., vol. 4, no. 4, p. 180,

1909

— Kendall and Goldsborough, Mem.

Mus. Comp. Zool., vol. 26, p. 271, pl.

2, fig. 1, 1911 (Funafuti).

1355

Depth 4 to $4\frac{2}{3}$; head $2\frac{2}{3}$ to $3\frac{3}{4}$, width $1\frac{2}{3}$ to $2\frac{1}{4}$. Snout $2\frac{2}{5}$ to $2\frac{2}{3}$ in head; eye $3\frac{1}{2}$ to $4\frac{1}{2}$, $1\frac{1}{4}$ to $1\frac{4}{5}$ in snout, greater than interorbital in young to $1\frac{2}{5}$ with age; maxillary reaches eye or $\frac{1}{8}$ in eye, expansion $1\frac{3}{4}$ to in eye, length $2\frac{1}{8}$ to $2\frac{3}{4}$ in head; barbels reach to hind preopercle edge in young, scarcely beyond eye with age, length $1\frac{1}{2}$ to $1\frac{3}{5}$ in head; teeth in villiform bands in jaws with about 5 irregular series above and 7 or 8 below, also band on vomer and each palatine; interorbital $3\frac{1}{2}$ to $3\frac{2}{3}$, broadly convex. Gill rakers 4 to 7 + 16 to 18, lanceolate, equal gill filaments or $1\frac{1}{2}$ in eye; 3 or 4 above and 5 or 6 below rudimentary tubercles.

Scales 30 to 32 in lateral line to

— Snyder, Proc. U. S. Nat. Mus.,
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Basilan Island; Hong Kong; Sandakan).
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p. 64. Batavia.

^{corr}
129 Upeneoides kuisiiana (Döderlein)
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ed. 2, 1927, p. 60, pl. 25, fig. 214a. $\frac{1}{m}$
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vol. 71, 1927, p. 7 (Benkoelen, Sumatra).
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pl. 2, fig. 1 (Luna and Camp Wallace, Ilaminos,
Olongapo, Malabon, Puerto Galera, Calapan,
Bacon, Legaspi, Ricuayan, Concepcion,
Culion Island, Catbalogan, Borongan,
New Washington, Bantayan, Cuyo, Jordan,
Cebu, Puerto Princesa, Palawan, Aguilayan,
Dumaguete, Cagayan de Misamis, Balabac,

Trachinotus bailloni Jordan and
Richardson, Mem. Carnegie Mus.,
 vol. 4, no. 4, p. 180, Aug. 28, 1909
 (Takaao).

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 (Sabang; Ceram).

~~2 $\frac{3}{4}$~~ , second ray $2 \frac{1}{8}$; caudal $1 \frac{1}{3}$, emarginate; least depth of caudal peduncle $2 \frac{1}{4}$; pectoral $1 \frac{3}{5}$; ventral $1 \frac{2}{3}$.

Pale brown, slightly paler below. Narrow median blackish line from interorbital to spinous dorsal, bordering base of each dorsal and then as single median line on postdorsal. Each side of snout above narrow line extends up over interorbital close above lateral line, fades out on caudal peduncle above. Blackish band from snout tip to eye and median on side to caudal base. Conspicuous blackish spot on caudal base just above lateral line about half size of pupil. Fourth dark line from lower eye edge to lower surface of caudal peduncle. Fins pale, except dark shade on spinous dorsal terminally. Upper and lower caudal edges slightly

Trachynotus baillonii Günther,
Cat. Fish. Brit. Mus., vol. 2, p. 484,
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vol. 16, p. 360, 1864 (Saparoua);
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99, 174, 191, 289 (Siam). — Fishes of Zanzibar, p. 64, 1866 (Aden; Zanzibar);

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— Klunzinger, Verh. zool. bot.

Ges. Wien, vol. 21, 1871, p. 449

(Red Sea)

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Fishes of Malabar, p. 98, 1865.

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vol. 25, 1902, p. 335 (Keerun, Giran,
Formosa, Hokoto). $\frac{1}{m}$ Duncker, Mitteil.
Naturh.-Mus. Hamburg, vol. 21, 1903 (1904),
p. 150 (Singapore). $\frac{1}{m}$ Johnstone, Rep.
Pearl Oyster Fisher. Gulf of Manaar,
pt. 2, 1904, p. 220 (Arrifu and south of
Cheval Paar). $\frac{1}{m}$ Pellegrin, Bull. Soc.
Zool. France, vol. 30, 1905, p. 84 (Baie
de Alang, Tonkin). $\frac{1}{m}$ Regan, Trans.
Zool. Soc. London, series 2, vol. 12, Zool.
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fathoms). $\frac{1}{m}$ Jordan and Richardson,
Bull. Bur. Fisher., vol. 27, 1907 (1908),
p. 260 (Cuyo). $\frac{1}{m}$ Seale, Philippine Journ.
Sci., vol. 5, no. 4, 1910, p. 278 (Sandaban,
Borneo). $\frac{1}{m}$ Snyder, Proc. U. S. Nat. Mus.,
vol. 42, 1912, p. 416 (Kagoshima and Tanegashima).
 $\frac{1}{m}$ Seale, Philippine Journ. Sci., vol. 9, no.

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 Manaar, 1890, p. 92 (Tuticorin and
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 Banka). $\frac{1}{m}$ Elera, Cat. Fauna Filipinas,
 vol. 1, 1895, p. 479 (Luzon; Manila Bay).
 $\frac{1}{m}$ Steindachner, Abhandl. Senckenberg.
 Naturf. Gesell., vol. 25, 1900, p. 419 (Ternate). $\frac{1}{m}$
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Vizagapatam).

Trachinotus botta Gilby, Mem.
Queensland Mus., vol. 13, p. 93, pl.
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Bay. — Fowler, Mem. Bishop
Mus., vol. 10, p. 152, 1928 (compiled).

Caesiomorus quadripunctatus
Rüppell, Atlas Reise nord. Afrika,
Fische, p. 90, pl. 24, fig. 1, 1828 (type
locality).

Trachinotus quadripunctatus
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~~Pearson, Ceylon Administr. Rep., 1912-13, p. 56.~~
~~p. 100 (Formosa). $\frac{1}{2}$ Weber, Siboga Exped.,~~
~~Fische, vol. 57, 1913, p. 293 (Sumbawa,~~
~~North Celebes, Abi Major, between Guebe~~
~~and Fan). $\frac{1}{2}$ Beaufort, Bijdr. Dierk.~~
~~Amsterdam, vol. 19, 1913, p. 124 (Sorong,~~
~~New Guinea). $\frac{1}{2}$ Barnard, Ann. South~~
~~African Mus., vol. 21, pt. 2, 1927, p. 583~~
~~(Natal coast).~~

Trachynotus quadripunctatus
Wakigawa, Ann. Carnegie Mus., vol. 15,
p. 220, pl. 34, fig. 2, 1924 (type
~~locality~~, Kii; Ryukyu, Formosa).

200

~~about 6~~ bright orange stripes, first
3 narrow; first along median line
of occiput, continued along dorsal
base but anterior end with
continuation arising some distance
before dorsal; second begins behind
snout tip, passes above eye and
backward to caudal base; third
crosses eye above and ends under
hind edge of first dorsal; fourth
begins on snout, passes through
middle of eye, thence backward,
ending in scarlet spot at caudal
base; fifth crosses premaxillary
under eye and backward along
lower edge of caudal peduncle to

Trachinotus russellii Cuvier, Hist. nat. Poiss., vol. 8, p. 436, 1831 (type locality, Pondicherry).

— Waite, Rec. Austral. Mus., vol. 5, p. 199, 1904 (). — McCulloch, Rec. Western Austral. Mus., vol. 1, p. 223, 1914 (Bernier Island).

Trachinotus russellii Jerdon, Madras Journ. Lit. Sci., 1851, p. 136. — Bleeker, Verh. Batavia. Genoot. Bengal), vol. 25, p. 44, 1853 (reference).

Trachinotus russellii Day, Fishes of India, pt. 2, p. 233, pl. 51, fig. 3, 1876; Fauna British India, Fishes, vol. 2, p. 178, fig. 61, 1889. —

Barnard, Ann. South African Mus., vol. 21, pt. 2, p. 554, Oct. 1927 (Natal).

Upeneus tragula Richardson
Upeneus tragula Richardson, Ichth. China
Japan, 1846, p. 220. Canton. $\frac{1}{m}$

Bleeker, Verhandel. Kon. Akad. Wetensch.
Amsterdam, vol. 15, no. 3, 1875, p. 11 (Java,
Quizend Islands, Bawean, Madura, Mas,
Singapore, Celebes, Sangir, Ternate,
Halmahera, Abi, Saparua, Batjan,
Ceram, Ambona, Goram, Banda,
Philippines); Atlas Ichth. Ind. Néerland,
vol. 9, 1877, pl. (2) 392, fig. 2. $\frac{1}{m}$ Macleay,
Proc. Linn. Soc. New South Wales, vol. 7,
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1883, p. 264 (Hood Bay, New Guinea). $\frac{1}{m}$
Jordan and Seale, Proc. U. S. Nat. Mus.,
vol. 28, 1905, p. 782 (Negros). $\frac{1}{m}$ Stead,
Fishes of Australia, 1906, p. 131, fig. 48
(New South Wales). $\frac{1}{m}$ Jordan and
Seale, Bull. Bur. Fisher., vol. 26, 1906

Trachinotus russelli Gilby, Proc.
Linn. Soc. New South Wales, vol. 14,
p. 1028, 1890.); Edible
Fish. New South Wales, p. 89, 1893.
— Tosh, Marine Zool. Rep. Queensland,
p. 4, pl., 1903.

Trachinotus russelli Jordan and Seale,
Bull. Bur. Fisher., vol. 25, p. 235,
1906 (reference). — Seale, Edible
Fish. New South Wales, p. 92, pl. 42,
1906. — Jordan and Richardson, Mem.
Carnegie Mus., vol. 4, no. 4, p. 150, ^{Aug. 28,} 1907,
(Takao). — Weber and Beaufort,
Fishes Indo Austral. Archip., vol.
6, p. 289, 1931 (compiled).
Trachinotus russelli Oshima,
Philippine Journ. Sci., vol. 26, no. 3,
p. 408, March 1925 (copied).

55100 U.S.N.M. Honolulu.
Albatross Collection. Length 250 mm.

1347

Trachinotus oblongus Cuvier, Hist.
 nat. Poiss., vol. 8, p. 437, 1831 (type
 locality, Java; Pondicherry). —
Becker, Nat. Genesck. Arch. ned.
 Ind., vol. 2, p. 516, 1845 (Batavia);
 Verh. Batavia. Genoot. (Bengal.),
 vol. 25, p. 44, 1853 (reference). —
Kendall and Goldsborough, Mem.
 Mus. Comp. Zool., vol. 26, p. 272, pl. 1,
 1911 (Mukuhia, Marquesas Islands).
 — Fowler, Mem. Bishop Mus.,
 vol. 10, p. 152, 1928 (Mukuhia).

Trachynotus oblongus Günther, Cat.
 Fish. Brit. Mus., vol. 2, p. 484, 1860
 (Sumatra).
 — Boulenger, Proc. Zool. Soc.
 London, 1887, p. 661.

Spinous dorsal whitish, with three faint brownish longitudinal bands. Caudal whitish, with six slightly oblique dusky to blackish bands on upper lobe and five on lower, only third broader and fourth more so and nearly black. Other fins all pale or whitish.

Micronesia, Polynesia, Hawaii.
Closely related to Epenoides vittatus,
but it differs in the ~~smaller~~ ^{smaller} scales,
~~and is~~ ^{more} ~~uniformly~~ ^{sparsely} ~~marked~~ ^{marked} with
generally milk white
color when fresh, golden bands soon fading.

17999 U.S.N.M. Honolulu. Dr. J. S. Streets.
Length 245? to 260 mm. 2 examples.

50667 U. S. N. M. Honolulu. Bureau of Fisheries. Length 205 mm? Type.

52817 U.S.N.M. Hawaiian Islands.
Bureau of Fisheries (No. 03148). Length
266 mm.

— Gilchrist and Thompson, Ann.
South African Mus., vol. 6, pt. 2,
p. 187, 1908 (Natal); Ann. Durban
Mus., vol. 1, pt. 4, p. 391, May 21, 1917
(reference).

Red Sea, Zanzibar, East Indies, Philippines.

246

Seale described this species as Amia magnifica, evidently thinking the structural differences sufficient. As compared with Klunzinger he gives D. VII - I, 8 compared with D. VII - I, 9 and A. II, 7 compared with A. II, 8. Klunzinger gives the color as silvery gray or bluish, with 4 or 5 citron yellow or golden longitudinal bands. Belly, breast and under jaw yellow. On head the longitudinal bands with blue reflections. Bleeker's account varies still greater, as D. VII - I, 9 or I, 10 and A. II, 8 or 9. The body is said to be pale blue with 6 longitudinal golden bands, and his figure doubtless colored from the preserved specimen 54 mm. long. Seale's example was but 40 mm.

2035

Trachinotus morali Thiollière,
Fauna Woodlark, p. 176, 1857
(type locality, Woodlark Island).

Xeriola morali (Montrouzier)
Thiollière, Fauna Woodlark,
p. 176, 1857 (name in synonymy).

Cruel 29 Upeneus arge Jordan and Evermann
Upeneus arge Jordan and Evermann, Bull.
U. S. Fish Comm., vol. 22, 1902 (1903), p. 187.
Honolulu. ^{on} Jenkins, Bull. U. S. Fish
Comm., vol. 22, 1902 (1903), p. 456 (Honolulu).
^{on} Snyder, Bull. U. S. Fish Comm., vol. 22,
1902 (1904), p. 527 (Honolulu). ^{on} Jordan
and Evermann, Bull. U. S. Fish Comm.,
vol. 23, pt. 1, 1903 (1905), p. 264, pl. 39
(Honolulu, Pearl Harbor, Hilo). ^{on}
Fowler, Copeia, no. 112, Nov. 20, 1922, p. 83
(Hawaii).

Upeneoides arge Fowler, Mem. Bishop
Mus., vol. 10, 1928, p. 227, pl. 19 C (Hilo,
Hawaii, Honolulu, Palmyra and Strong
Islands, Apiang); Proc. Acad. Nat.
Sci. Philadelphia, 1929 (1930), p. 648
(Honolulu).

Upeneoides vittatus (not Forsk.) Streets,
Bull. U. S. Nat. Mus., no. 7, 1877, p. 71 (Honolulu).

2036

Trachinotus rhomboides Quoy, Mém. Soc.
Sci. Nat. Cherbourg, vol. 1, p. 334, 1817-18 (on
Quoy, op. cit., pl. 1, pp. 160, 161, 161, type
locality, New Caledonia).

Trachynotus coppingeri Günther,
Rep. Voy. Alert, p. 29, pl. 3, fig. 2,
1884 (type locality, Percy Island,
Cloudy Bay, New Guinea).

Trachinotus velox Gilby, Proc.
Nat. Soc. Queensland, vol. 21, p. 14,
1905 (type locality,

Trachynotus cuvieri Wakiya, Ann.
Carnegie Mus., vol. 15, p. 220, 1924
(type locality, Misaki; Uwajima;
Ryukyu; Formosa) (on Trachynotus
bailloni Cuvier).

Depth $3\frac{7}{8}$ to 4; head $3\frac{2}{5}$ to $3\frac{7}{8}$, width $1\frac{7}{8}$ to 2. Snout $2\frac{1}{4}$ to $2\frac{2}{5}$ in head; eye 5 to $5\frac{1}{8}$, $2\frac{1}{8}$ to $2\frac{1}{3}$ in snout, $1\frac{3}{5}$ to $1\frac{7}{8}$ in interorbital; maxillary reaches eye, expansion $1\frac{1}{5}$ to $1\frac{1}{4}$ in eye, length $2\frac{1}{5}$ to $2\frac{3}{5}$ in head; barbels nearly reach opposite hind preopercle edge, length $1\frac{1}{2}$ to $1\frac{3}{5}$ in head; teeth villiform, in 4 or 5 irregular series forming bands in jaws, an anchor shaped band on vomer and rather broad band on each palatine; interorbital 3 to $3\frac{1}{5}$, slightly elevated and broadly convex. Gill rakers $5+17$, lanceolate, $1\frac{1}{8}$ in gill filaments or $1\frac{2}{5}$ in eye; 3 above and 5 below rudimentary tubercles.

Scales 38 or 39 in lateral line to caudal base and 3 more on latter; 3 above, 7 below, 16 or 17 predorsal

2037
Trachynotus jordanii Wakuiya,
Ann. Carnegie Mus., vol. 15, p. 221,
pl. 35, fig. 1, 1924 (type locality,
Bonin Islands).

23379. Llimango Bay, Burias Island.
March 5, 1909. Length 41 mm.

12252. Batan Island. June 5, 1909.
Length 46 mm.

3 examples. Cataingan Bay, Masbate
Island. April 17, 1908. Length 45 to 48 mm.

15945 and 15948. Pangasinan Island,
vicinity of Jolo. February 13, 1908.
Length 51 to 55 mm. ~~[317, 318.]~~

6 examples. Southern Lagoon,
Touminao Island, Sulu Archipelago.
February 26, 1908. [317, 318.]

23325. Simaluc Island, north of
Tawi Tawi. September 22, 1909. Length
40 mm. [1987.] Generally translucent
pearly. Head and body crossed by

Depth $2\frac{2}{5}$ to $3\frac{3}{5}$; head $3\frac{1}{4}$ to $4\frac{1}{8}$, width $1\frac{7}{8}$ to 2. Snout $3\frac{1}{4}$ to $3\frac{1}{2}$ in head; eye $4\frac{3}{5}$ to 5, $1\frac{1}{3}$ to $1\frac{1}{2}$ in snout, $1\frac{1}{3}$ to 2 in interorbital; maxillary reaches $\frac{1}{5}$ to $\frac{3}{5}$ in eye, expansion 2 to $2\frac{1}{4}$ in eye, length $2\frac{1}{4}$ to $2\frac{4}{5}$ in head; interorbital $2\frac{4}{5}$ to $3\frac{1}{4}$, convexly elevated. Gill rakers 7+13, lanceolate, $1\frac{1}{3}$ in gill filaments, which $1\frac{1}{3}$ in eye.

Scales minute in young, rather large with age posteriorly or on tail. Lateral line axial, but very slightly irregular; pores 80 in lateral line in adult. Scales with 2 or 3 basal radiating striae; circuli moderately fine, complete.

D. I, VII, 21, I to 23, I, last spine
 3 to $3\frac{3}{4}$ in head, first branched
 ray $2\frac{1}{2}$ to $2\frac{7}{8}$ in fish without
 caudal, $1\frac{2}{5}$ in head in young;
 A. II — I, 21, I, first branched
 ray $2\frac{3}{4}$ to 3 in fish without
 caudal, $1\frac{1}{3}$ in head in young;
 caudal $2\frac{2}{5}$ to $2\frac{4}{5}$ in rest of
 fish, widely forked, long
 slender lobes pointed; least
 depth of caudal peduncle $2\frac{3}{5}$
 to $3\frac{1}{4}$ in head; pectoral $1\frac{1}{4}$ to
 $1\frac{2}{5}$, ^{rays II, 15} ventral $1\frac{4}{5}$ to $2\frac{1}{3}$, rays
I, 5.

Back light olive brown,
 sides and below white with
 silvery tinge. Adult with 5
 round black spots close
 along and largely above lateral

line, first 3 greatly contrasted
and much larger than eye;
last 2 smaller than eye and
not especially dark. Spinous
dorsal dusky. Soft dorsal
and anal with long front
lobes dusky to blackish,
edge of lower part of fin
dark gray. Caudal dusky,
darker marginally. Pectoral
grayish, paler below. Iris
silvery white. Young paler
and without dark spots or
only with faint traces along
lateral line. Coloration much
more uniform and silvery white.

Red Sea, ^{Arabia,} Zanzibar, Natal,
Madagascar, Mauritius, Bourbon,
Seychelles, India, Ceylon, Malaya,

East Indies, Philippines, Siam,
Formosa, Liu Kiu, Western
Australia, Queensland, Melanesia,
Micronesia, Polynesia.

20940. Albuayog, Leyte. July 26, 1909.
Length 94^{to 144} mm. Three examples.

One example. Atulayan Bay, Luzon.
June 17, 1909. Length 40 mm.

10602, 10603, 22663 [572]. Catangan
Bay, Masbate. April 18, 1908.
Length 157 to 198 mm.

8608, 8609. Matnog Bay.
May 31, 1909. Length 280 to 298 mm.

11422. Hogas Point, Panay.
February 4, 1908. Length 183 mm.

One example. Observatory Island.
December 9, 1908. Length 27 mm.

19567, 20809 to 20811. Paluan
Bay, Mindoro. December 11, 1908.
Length 81 to 129 mm.

8429. Pandanon Island. March
24, 1909. Length 250 mm.

Ten examples. Port Caltan. December
15, 1908. Length 42 to 104 mm.

Cuv 29 Pseudupeneus cinnabarinus (Cuvier)

Upeneus cinnabarinus Cuvier, Hist. Nat. Poiss., vol. 3, 1829, p. 475. Tringemale, Ceylon. $\frac{1}{m}$ Bleeker, Verhandel. Batavia. Genootsch. (Nal. Ichth. Bengal), vol. 25, 1853, p. 34 (reference). $\frac{1}{m}$ Day, Fishes of India, pt. 1, 1875, p. 126 (describes type); Fauna British India, Fishes, vol. 2, 1889, p. 33. $\frac{1}{m}$ Pearson, Ceylon Administrat. Rep., 1915-18, pp. F17, F18.

Depth $3 \frac{1}{8}$ of total; head 4. Eye 4 in head, 2 in snout, 1 in interorbital; maxillary reaches to orbit; barbels rather thick, reach below front edge of orbit; teeth conic, uniserial in each jaw; opercular spine rather strong.

Scales 29 in lateral line, 3 above, 7 below. Tubes in lateral line arborescent posteriorly.

13469, to 13478. Port San Pio ²⁰⁴³
Quinto, Camiguin. November 10, 1909.
Length 76 to 125 mm.

21982. Port San Pio Quinto.
November 11, 1908. Length 154 mm.

6582. Port San Vicente.
November 18, 1908. Length 63 mm.

Six examples. Virinas Island,
Hakoda Bay near Alfonso XIII.
December 30, 1908. Length 53 to
127 mm.

19994, 19995. West coast of
Palani Island. November 18, 1908.
Length 101 to 108 mm.

20777. Powatik Harbor,
Mukyan Island. November 28, 1909.
Length 106 mm.

12530
on head. Each scale of body
with yellowish spot. Fins rosy.
Soft dorsal and anal with 3 or 4
yellowish longitudinal bands. Caudal
yellowish posteriorly. Length to 290
mm. (Bleeker.)

Red Sea, Zanzibar, Mauritius,
India, East Indies, Philippines,
Melanesia.

U.S. N. M., No. 47836. Port Jackson,
New South Wales. Australian Museum.
Length 272 mm.

U.S. N. M., No. 56203. Mindanao.
Bureau of Fisheries (3761). Length
220 mm.

U.S. N. M., No. 5703. Bonin Islands.
William Stimpson. Length 113 to 220 mm.
Four examples.

U.S. N. M., No. 66064. Ellice Islands.
Albatross Collection. Length 230 mm.

U.S. N. M., No. 66065.
Albatross Collection. Length 277 to 310 mm.
Three examples. All have a single
large black spot on lateral line
about opposite soft dorsal origin,
not quite as large as eye but very
contrasted. As Trachinotus oblongus.

U.S. N. M., No. 66066. Nukuhiva.
Albatross Collection. Length 260 mm.
caudal ends. Like No. 66065 in color.
As Trachinotus oblongus.

1342
... 52856 to 52859 A.N.S.P. Orion, Luzon.
May 14, 1923. Rev. Joseph Clemens.

Purchased. Length 130 to 145 mm.

53048 A.N.S.P. Durban Bay, Natal.
1927. H. W. Bell Marley. Length 146 mm.

2095

Genus Parastrumateus Bleeker

Parastrumateus Bleeker, Recl.
Tijds. dierk., vol. 2, (1865) p. 174,
(Type Stromateus niger Block,
monotypic.)

Lipolectus (not Bennett, ^{Dec. 6,} 1831) Cuvier,
Hist. Nat. Poiss., vol. 8, (1831) p. 323,
(Type Stromateus niger Block, ^{Jan. 1832}).
designated by Gill, Proc. Acad.
Nat. Sci. Philadelphia, (1862) p.
1264)

Formio (Whitley) McCulloch, Austral.
Zool. Mem., no. 5, pt. 3 p. 193, Sep.
10, 1929. (Type Lipolectus stromateus
Cuvier, orthotypic.)

10 examples. Parang Parang,
Mindanao. May 23, 1908. Length 94 to 120 mm.

8 examples. Pucot River, Mariveles.
January 29, 1909. Length 75 to 99 mm. Two
of these with prolonged second dorsal spine.

31 examples. Ragay River, Ragay Gulf,
Luzon. March 10, 1909. Length 45 to 95 mm.

16 examples. River at Pasacao, Luzon.
March 9, 1909. Length 48 to 99 mm. Two
largest with prolonged second dorsal spine.

1 example. Vera del Sur Island,
Palawan reef sand flat. April 6, 1909. Length
81 mm.

8 examples. Gaur River, Legaspi. June 7,
1909. Length 54 to 75 mm.

1 example. Sandakan market, Borneo.
March 2, 1908. Length 79 mm.

57929 U. S. N. M. Zamboanga. Dr. E. A.
Mearns. Length 21 to 94 mm. 4 examples.
As Xystasma oyena.

Body elongately ovoid, compressed.
 Head moderate. Snout obtuse.
 Eye advanced, before middle in
 head length. Maxillary reaches
 eye. Teeth small, uniserial in
 jaws, palate and tongue toothless.
 Lower gill rakers ^{branchiostegals 7.} 14. Scales
 small, extend on vertical fins.
 Lateral line complete, axial,
 with short keel posteriorly or
 on caudal peduncle. ~~Anal~~ Dorsal
 with 2 to 5 short spines in
 young, anal with 2, concealed
 with age. Soft dorsal and anal
 with elevated lobes anteriorly in
 young, shorter with age. Caudal
 well forked. Pectoral longer
 than head. Ventrals only
 present in young, jugular.
 One species. Greatly like
Pampus superficially but without
 acropharyngeal denticles of the
Stromateidae.

Parastromateus niger Bloch

Stromateus niger Bloch, Naturges.

Ausland. Fische, vol. 12⁹, (1775) p.

⁹³
85, pl. 422, no type locality [probably
Malabar]. — Schneider, Syst.

Ichth. Bloch, p. 492, 1801 (Tranquebar).

— Shaw, General Zool., vol. 4, p. 111,

1804. — Lacépède, Hist. Nat. Poiss.,

vol. 4, pp. 692, 693, 1802 (on Bloch).

— Stromateus Cuvier, Hist. Nat.

Poiss., vol. 9, p. 385, 1833 (Pondicherry).

— Richardson, Ichth. China and

Japan, p. 272, 1846 (China Sea).

14 examples. Malampaya River,
Palawan Island. December 26, 1908.
Length 39 to 123 mm. From beyond tide water.

114 examples. Mantaguin Bay, Palawan.
April 1, 1909. Length 25 to 82 mm. About
16 with prolonged second dorsal spine,
in largest reaches base of last ray,
though in others much shorter.

4 examples. Mantaguin Bay. April 2,
1909. Length 65 to 87 mm.

2 examples. Mariveles Bay, Manila Bay,
Luzon. January 27, 1909. Length 60 to 64 mm.

4 examples. Laboda Bay, Palawan.
December 31, 1908. Length 75 to 101 mm.

1 example. Near mouth of Tayabas River,
Luzon. February 25, 1909. Length 52 mm.

4 examples. Near mouth of Tayabas River.
February 27, 1909. Length 50 to 93 mm.

3 examples. Paluan River, Mindoro.
December 11, 1908. Length 19 to 56 mm.

— Bleeker, ~~Bleeker~~ Verh. Batavia.
 Genoot. (Madura), vol. 22, 1849, p. 4,
 — Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 4, p. 114, 1847, 1850,
 (Kammal; Lamprang); hat. Tijds.
 Ned. Indie, vol. 1, 1850, p. 370 (Batavia;
 Cheribon; Tasurman; ^{Jerdon, Madras Journ. Nat. Hist., p. 128, 1851, — Bleeker,} Surabaya; vol.
 3, 1852, p. 53 (Singapore); Verh.
 Batavia. Genoot. (Makreel), vol. 24,
 1852, p. 77, (Javan localities); (hal.
 Ichth. Bengal), vol. 25, 1853, p. 44,
 (reference); hat. Tijds. Ned. Indie,
 vol. 7, 1854, p. 312 (Tjiringin); vol.
 9, 1855, p. 394, (North Pasurman);
 Act. Soc. Sci. Ind. Néerl., vol. 1, no.
 3, 1856, p. 2 (Macassar); Verh.
 Batavia. Genoot. (hal. Ich. Japan),
 vol. 26, 1857, p. 5, (Nagasaki); Act.
 Soc. Sci. Ind. Néerl., vol. 3, no. 3,
 1857-58, p. 6, (Japan); hat. Tijds.
 Ned. Indie, vol. 16, 1858, p. 407,
 (Japara, ~~Japan~~ Java); vol. 21, 1860,
 p. 137, 1860 (Muntok, Banka).

Xystoema ovatum Ogilby, Handbook of Sydney, 1898, p. 129.

Xystoema ovatum Waite, Mem. Australian Mus., vol. 4, pt. 1, 1899, p. 83, pl. 13.

L. Roughley, Fishes of Australia, 1916, p. 119, pl. 38.

Xystoema ovata Stead, Fishes of Australia, 1906, p. 117 (New South Wales, Queensland, West Australia).

Depth $2\frac{2}{5}$ to $2\frac{1}{2}$; head $2\frac{4}{5}$ to $3\frac{1}{2}$, width $1\frac{7}{8}$ to $2\frac{1}{4}$. Snout $3\frac{1}{5}$ to $3\frac{1}{2}$ in head; eye 3 to $3\frac{1}{2}$, greater than snout in young to $1\frac{1}{8}$ with age, 1 to $1\frac{2}{5}$ in interorbital; maxillary reaches to or $\frac{1}{8}$ in eye, expansion 3 in eye, length $2\frac{7}{8}$ to 3 in head; interorbital $2\frac{1}{5}$ to 3, broadly convex. Gill rakers 6 + 7, short points, longest $\frac{1}{3}$ of gill filaments, which $1\frac{3}{4}$ in eye.

Scales 38 to 40 in lateral line to caudal base and 3 or 4 more on latter;

— Günther, Cat. Fish. Brit. Mus.,
vol. 2, p. 401, 1860 (China; Malay
Peninsula). — Day, Fishes of
Malabar, p. 79, 1865. — Playfair,
Fishes of Zanzibar, p. 65, 1866
(Bagamoya, East Africa).

— Day, Fishes of India, pt. 2, p. 247,
pl. 53, fig. 4, 1876 (Malabar; Madras);
Fauna British India, Fishes, vol.
2, p. 199, 1889.

120

rostral bar includes chin,
not on postocular; spinous
dorsal blackish terminally.

notata

w.³ Brown, each scale with broad
deep brown bar producing reticulated
design; small round dusky caudal
spot basally.

t³. Dorsal spines 6.

w.⁴ Pale brown, each
scale on side with
dark median blotch;
2 dark oblique bands
on cheeks from eye.
nostril guideae

~~ff.~~^{ee} Depth $2\frac{1}{5}$ to $2\frac{7}{8}$.

~~ff.~~^{ff.} Pale brown, without
any markings; depth $2\frac{3}{4}$ to
 $2\frac{7}{8}$.

cardinalis

~~ff.~~^{ff.} Tail without large lateral
dusky blotch but dark band
on lateral line dark at
caudal base and out over
caudal medially; broad dark
postocular band to pectoral
base; depth $2\frac{2}{3}$.

dieneae

~~p. 137 (Muntok, Banca).~~

Parastromateus niger Bleeker,
Ned. Tijds. Dierk., vol. 2, (1865) p.
174, (Giam; copied). — Fowler,
Proc. Acad. Nat. Sci. Philadelphia,
vol. 87, p. 142, 1935 (Bangkok).

Caesi 79

Gerrus ovatus Günther

924

Gerrus ovatus Günther, Cat. Fishes Brit. Mus.,
vol. 1, 1859, p. 343. Australia (Figure not
published); vol. 4, 1862, p. 257 (Australia).
+ Castelnau, Proc. Zool. Acclimatiz. Soc.
^mVictoria, vol. 2, 1873, p. 139 (West Australia);
Proc. Linn. Soc. New South Wales, vol. 3, 1878,
p. (354) 391 (Port Jackson). + Klunzinger,
Sitz. Ber. Akad. Wiss. Wien, ^mmath.-naturw.
Klasse, vol. 80, pt. 1, 1879, p. 354 (Port Darwin).
+ Kent, Great Barrier Reef, 1893, p. 369
^m(Queensland). + Ogilby, Edible Fish. Crust.
New South Wales, ^m1893, p. 147 (New South Wales
and Moreton Bay). + Waite, Rep. Sea Fisher.
Thetis, 1898, p. 3 (off Newcastle, New South
Wales, in 16 to 19 fathoms). + McCulloch,
Fishes New South Wales, ed. 2, 1921, p. 58, pl. 24,
fig. 210a.

Apolectus niger Jordan and Snyder,
Annot. Zool. Japon., vol. 3, (1901) p.
70, (reference).

— Fowler, Journ. Acad. Nat. Sci.
Philadelphia, ser. 2, vol. 12, p. 513, June
10, 1904 (Padang).

— Jordan and Eversmann, Proc. U. S. Nat. Mus.,
vol. 25, p. 339, fig.

— Jordan and Seale, Bull. Bur. Fisher.,
vol. 26, (1906) p. 15, (Cavite). — Jordan

and Richardson, Bull. Bur. Fisher.,
vol. 27, (1907 (1908)) p. 252 (Manila);
Mem. Carnegie Mus., vol. 4, no. 4, p. 179, Aug.
28, 1909 (Takao record).
fig. 10
(copied)

— Fowler, Proc. Acad. Nat. Sci.

Philadelphia, vol. 77, 1925 p. 218 (Katal).

— Barnard, Ann. South Afric. Mus., vol. 26, pt. 2, p. 656, Oct. 1927 (Katal). — Fowler,
Journ. Bombay Nat. Hist. Soc., November

1925 (p. 6) (Bombay); (Oct. 20, 1927) p. 258

(Bombay; Padang material; vol. 33,

no. 1, September 30, 1928 p. 111) (Bombay).

Caen²⁹ Gerres subfasciatus Cuvier

Gerres subfasciatus Cuvier, Hist. Nat. Poiss.,
vol. 6, 1830, p. 477. Port Jackson. $\frac{1}{m}$ Günther,
Cat. Fishes Brit. Mus., vol. 1, 1859, p. 343
(no locality); vol. 4, 1862, p. 257 (no locality).
 $\frac{1}{m}$ Castelnau, Proc. Linn. Soc. New South Wales,
vol. 3, 1878, pp. 354, 391 (Port Jackson). $\frac{1}{m}$
McCulloch, Fishes New South Wales, ed. 2, 1927,

p. 58. — J. Schmidt, Trans. Pac. Comm. Acad. Sci. USSR, vol. 1, 1930,
p. 53 (Itoyan, Okinawa, ^{Riu Kiu} Riu Kiu).

Depth 3 in total length. Snout rather
shorter than eye. D. IX, 10, spines slender,
third half body depth. A. III, 7, second
spine stronger but shorter than third or
 $\frac{1}{5}$ body depth. Silvery, with 6 or 7
indistinct vertical bands. (Günther.)

New South Wales, ^{Riu Kiu} a little known species,
apparently differing from Gerres oatus
in indistinct vertical bands according
to McCulloch.

Formio niger McCulloch, Austral.
Mus. Mem., no. 5, pt. 2, p. 193, Sep.
10, 1929 (reference).

— Fowler, Proc. Acad. Nat. Sci.
Philadelphia, vol. 86, 1934, p. 453,
fig. 32 (young) (Durban, Natal).

42030 U.S.N.M. Port Jackson, New
South Wales. Australian Museum.
Length 191 mm.

59936 U.S.N.M. Port Hacking, New
South Wales. D. G. Stead. Length 61 to
161 mm. 6 examples.

Apolectus stromateus ^{Cuvier} ~~Valenciennes~~,
 Hist. Nat. Poiss., vol. 8, ~~1831~~, p. 439,
 pl. 238, 1831 (Jan. 1832) (type
 locality, Malabar). — Cantor, Journ.

Asiatic Soc. Bengal, vol. 18, pt. 2, p. 1105,
 1849 (1850) (Pinang). —

Theserinus vachellii Richardson, Ichth.
 China and Japan, (1845) p. 273 (type
 locality, China seas; Canton).

— Swainson, Nat. Hist. Animals, vol. 2, p. 252, 1839
 (on Cuvier).

Temnodon inornatus (Kuhl and Van
Hasselt) Bleeker, Verh. Batavia.

Genoot. (Makreel.), vol. 24, (1852) p.

77 (name in synonymy).

92

5 above, 9 below, 15 to 20 predorsal extending forward opposite nostrils and premaxillary groove entirely scaled over; 2 or 3 rows of scales on cheek to preopercle ridge. Scales with 6 or 7 basal radiating striae; circuli very fine.

D. IX, 10, I, second spine $1\frac{1}{5}$ to $1\frac{3}{5}$ in head, first ray $2\frac{1}{10}$ to $2\frac{1}{3}$; A. III, 7, I, third spine 2 to $2\frac{1}{10}$, first ray $1\frac{3}{4}$ to 2; least depth of caudal peduncle $2\frac{1}{4}$ to $2\frac{3}{4}$; ventral $1\frac{1}{3}$ to $1\frac{1}{2}$; caudal $2\frac{4}{5}$ to 3 in combined head and body to caudal base; pectoral $2\frac{1}{2}$ to 3.

Back brown or olivaceous, sides and below whitish. Iris slate. Fins pale. Dorsals dusky terminally, blackish on spinous fin. Anals and caudal with some brownish.

New South Wales, Queensland, Northern Territory, West Australia.

Depth $1\frac{1}{2}$ to $2\frac{1}{3}$; head $2\frac{4}{5}$ to 4, width $1\frac{3}{5}$ to $2\frac{1}{5}$. Snout 3 to $3\frac{1}{3}$ in head from snout tip; eye $4\frac{1}{2}$ to $6\frac{1}{8}$, $1\frac{1}{3}$ to 2 in snout, $1\frac{1}{3}$ to $2\frac{3}{4}$ in interorbital; maxillary reaches eye, expansion $1\frac{7}{8}$ to $2\frac{1}{3}$ in eye, length 3 to $3\frac{1}{6}$ in head from snout tip; interorbital 2 to $2\frac{4}{5}$, convexly elevated. Gill rakers 6 or 7 + 14, lanceolate.

Scales 58 to 110 in lateral line; 12 to 15 along lateral line posteriorly slightly thickened or beveled; 28 above, 40 below.

Scales sometimes with single basal stria; circuli 32 to 136, complete.

D. II, 41, I to 46, I, third branched ray $2\frac{1}{2}$ to $2\frac{7}{8}$ in fish without caudal; A. II, 37, I or 38, I, third branched ray $2\frac{2}{5}$ to $3\frac{1}{8}$; caudal $3\frac{1}{4}$ to $3\frac{3}{4}$, forked; pectoral $2\frac{2}{5}$ to $2\frac{4}{5}$, rays II, 18; least depth of

caudal peduncle $4\frac{1}{8}$ to $6\frac{1}{2}$ in
total head length; ventral $1\frac{1}{4}$ to
 $2\frac{2}{3}$ in young.

Purplish gray on back.
Young with 5 obscure broad
dark vertical bands. Iris
brownish. Dorsal and anal
slaty. Caudal pale brown.
Edges of all vertical fins
slightly dusky. Pectoral brownish.

2056

8848. Catbalogan, Samar.
April 15, 1908. Length 148 mm.

7912. Manila market.
March 17, 1908. Length 70 mm.

5362. Iton market, Iloilo.
March 30, 1908. Length 85 mm.

8295. Norogon, Luzon.
March 12, 1909. Length 252 mm.

19731. Tacloban market.
July 25, 1909. Length 73 mm.

U. S. N. M., three examples
(with U. S. N. M., no. 75942). Japan?
P. L. Jouy. (2192, 2193.) Length 106
to 120 mm. Des Stromateus argenteus.

~~6735~~ U.S.N.M. Bonin Islands.
William Stimpson. Length 164 to 275
mm. 2 examples. Lower gill rakers 21.

~~55127~~ U.S.N.M. Honolulu. Albatross
Collection. Length 218 mm.

~~56793~~ U.S.N.M. Apia. Bureau of
Fishes. Length 96 to 150 mm.

~~65957~~ U.S.N.M. Borabora. Albatross
Collection 1879. Length 95 mm. Lower gill
rakers 22.

~~65956~~ U.S.N.M. Taabomo, Guam. Albatross
Collection 1879. Length 140 to 257 mm.
4 examples in poor preservation.

~~65958~~ U.S.N.M. Funafuti. Albatross
Collection 1879. Length 108 to 127 mm.
2 examples in poor preservation.

~~65959~~ U.S.N.M. Uman, Toga Island.
Albatross Collection 1879. Length 140 mm.

~~65960~~ U.S.N.M. Guam. Albatross
Collection. Length 74 mm.

A. N. S. P., four examples. Bombay.
Bombay Natural History Society. 1925.
Length 112 to 168 mm.

A. N. S. P., four examples. Bombay.
Dr. F. Hallberg. 1925. Length 62 to 80
mm.

A. N. S. P., one example. Bombay.
Dr. F. Hallberg. 1925. Length 240 mm.

A. N. S. P., one example. Natal.
1922. H. W. Bell Marley. Length 500 mm.

52753 and 52754 A.N.S.P. Union.
May 11, 1923. Rev. Joseph Clemens. Purchased.
Length 95 to 100 mm.

52755 and 52756 A.N.S.P. Vanta Maria,
Ilocos Sur, Luzon. January 26, 1923. Rev.
Joseph Clemens. Purchased. Length 54 to 70 mm.

52757 to 52759 A.N.S.P. Vanta Maria.
January 26, 1923. Rev. Joseph Clemens.
Purchased. Length 76 to 98 mm.

52760 A.N.S.P. Arani, Luzon. April
27, 1923. Rev. Joseph Clemens. Purchased.
Length 34 mm.

53175 A.N.S.P. Bombay, India. Prof.
F. H. Allberg. 1924. Purchased. Length 157 mm.